

शिखागोविश्वविद्यालये

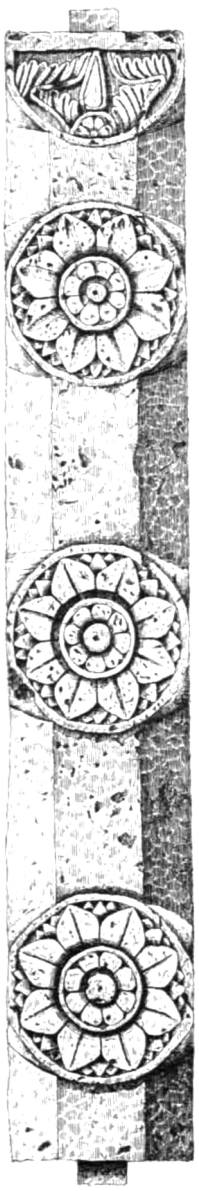
प्रारम्भिकसंस्कृतम्

FIRST-YEAR SANSKRIT

AT THE UNIVERSITY OF CHICAGO



अल्लटाचार्योद्भावितः पाठक्रमः  Designed by Andrew Ollett



ASSIMILATION

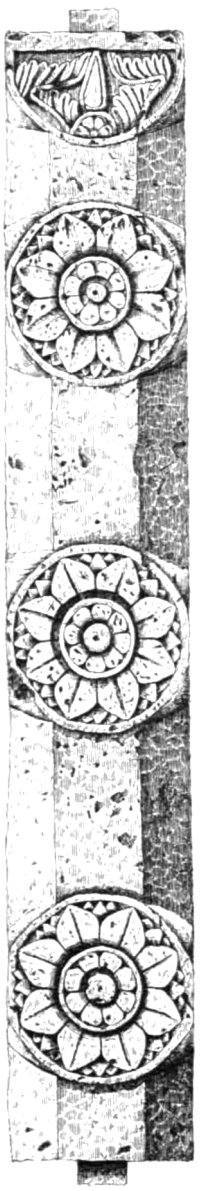
savargīkaraṇam



सवर्गीकरणम्

MORE INTERNAL SANDHI

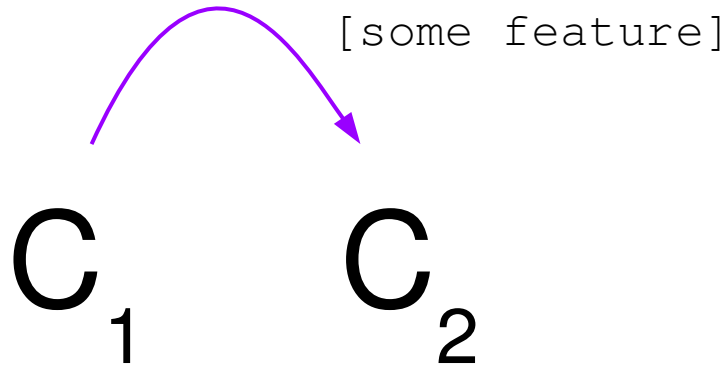
We're now going to talk about another *internal sandhi* process. When one consonant comes into direct contact with another consonant, one of them will usually take on some of the features (like *voice*, *aspiration*, or *place of articulation*) of the other. This process is called **assimilation**.



MORE INTERNAL SANDHI

Assimilation can happen in either direction.

In **progressive assimilation**, the second sound takes on the features of the first:



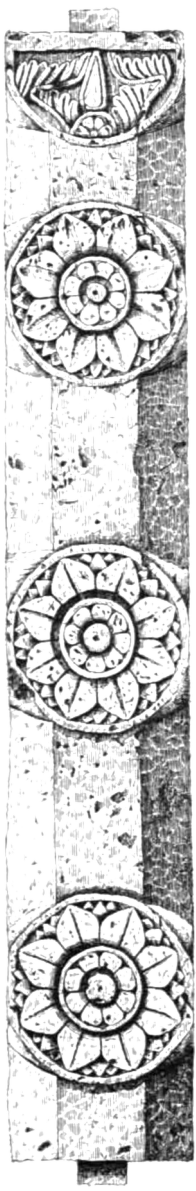
MORE INTERNAL SANDHI

Assimilation can happen in either direction.

In **regressive assimilation**, the first sound takes on the features of the second:

[some feature]

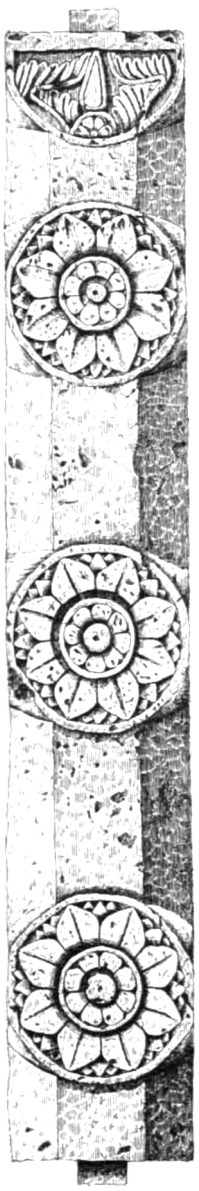
C_1 C_2



MORE INTERNAL SANDHI

Generally a vowel, semivowel, or nasal has **no effect** on the preceding sound in internal *sandhi*. Hence we will mostly be talking about the interaction of **stop consonants** with each other and with **sibilants**.

The processes of assimilation can be seen as the assimilation of **place of articulation**, **voice**, and **aspiration**, often simultaneously.



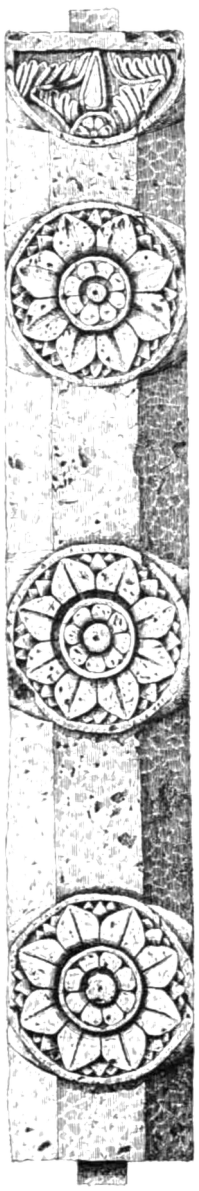
PLACE OF ARTICULATION

Let's start with **place of articulation**. The basic rule here is that **coronal consonants** (**palatals**, **retroflexes** and **dentals**) have a tendency to lose their place of articulation next to other consonants (including other coronals).

DEPALATALIZATION

Most notably **palatals are generally depalatalized** (usually into velars, but sometimes into retroflexes) before other stop consonants and sibilants.

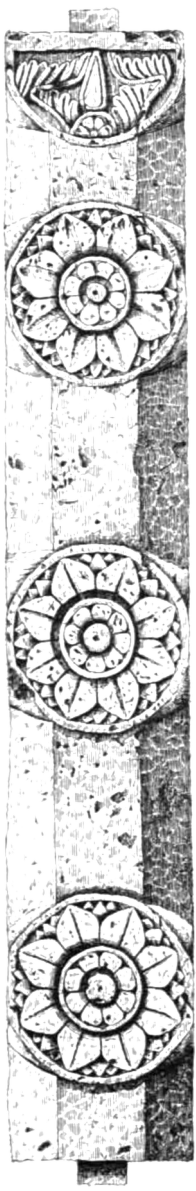
- ❖ You will observe that palatals often alternate with velars (*yajati* “he sacrifices” vs. *yāgaḥ* “sacrifice”). The Sanskrit palatals actually come from two sources: Proto-Indo-European velars and Proto-Indo-European palatovelars. The different outcomes of palatals in internal *sandhi* are almost entirely due to this historical difference.



DEPALATALIZATION

A *c* is **always** depalatalized into *k* before a stop or sibilant:

uc + ta-

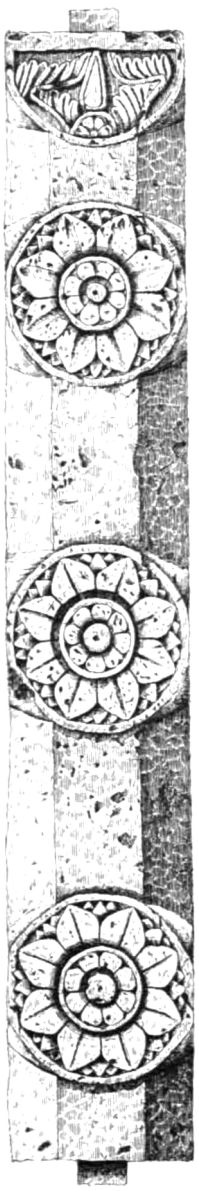


DEPALATALIZATION

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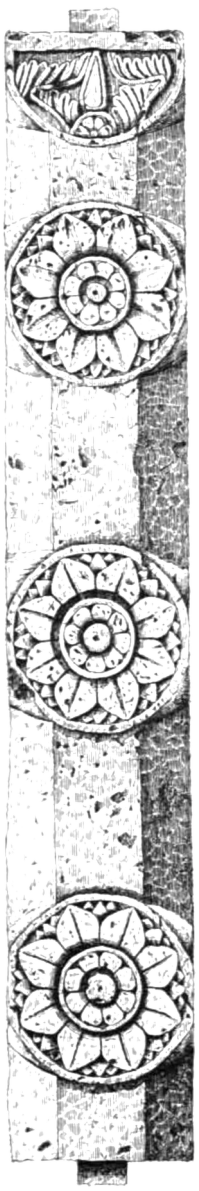
uk + ta-

“spoken”



DEPALATALIZATION

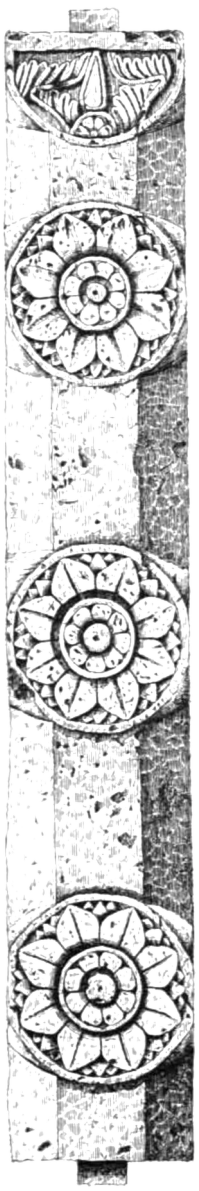
A *j* will exhibit two developments (depending on whether it represents an earlier velar or palatovelar). In some words, it will be depalatalized into *g*. In others, it's a little more complicated.



DEPALATALIZATION

The depalatalization of *j* into *g*:

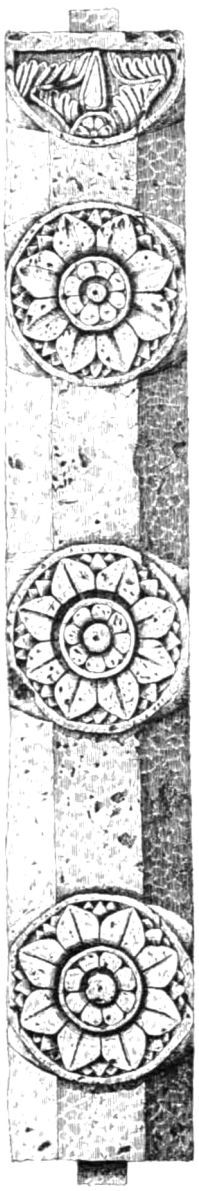
ruj + na-



DEPALATALIZATION

The depalatalization of *j* into *g*:

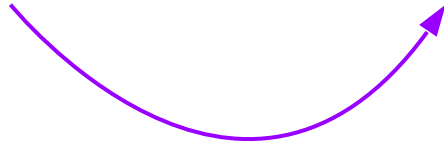
rug + na-



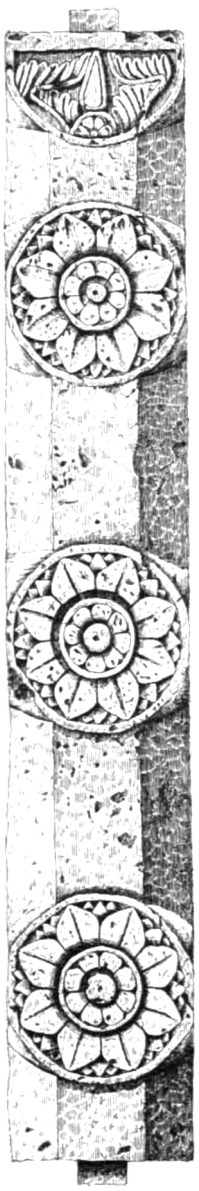
DEPALATALIZATION

The depalatalization of *j* into *g*:

rug + ṇa-



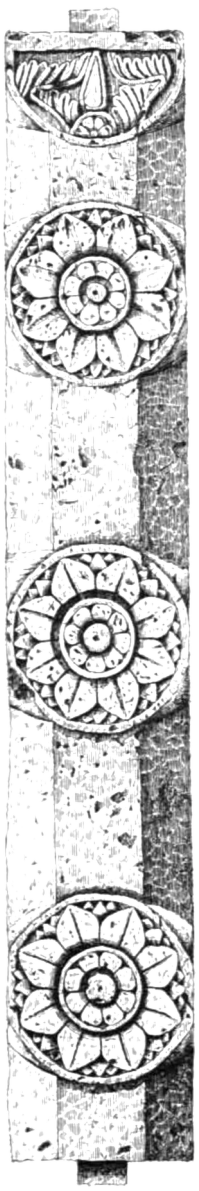
“broken”



DEPALATALIZATION

The sibilant ś also loses its palatal place of articulation before stop consonants. We've already seen in an earlier lecture how ś turns a following dental stop into a retroflex, and then becomes a retroflex itself:

dr̥ś + ta-



DEPALATALIZATION

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DEPALATALIZATION

The sibilant ś also loses its palatal place of articulation before stop consonants. We've already seen in an earlier lecture how ś turns a following dental stop into a retroflex, and then becomes a retroflex itself:

dr̥ś + ṭa-
“seen”

DEPALATALIZATION

Before the *s* of a verbal stem or ending (as well as in the declension of the words *draś*, *diś*, and *spraś*), a palatal *ś* becomes *k* (and hence we get *kṣ* by RUKI):

draś + sya-



DEPALATALIZATION

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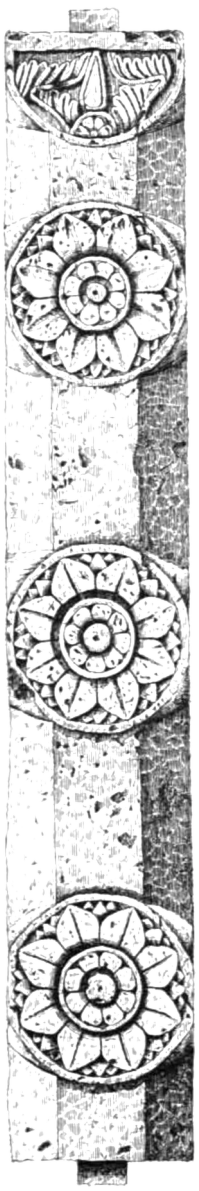
drak + sya-

DEPALATALIZATION

Before the *s* of a verbal stem or ending (as well as in the declension of the words *drś*, *diś*, and *sprś*), a palatal *ś* becomes *k* (and hence we get *kṣ* by RUKI):

drak + ṣya-

“will see”



DEPALATALIZATION

In other contexts (including at the end of a word) ś tends to become ṭ:

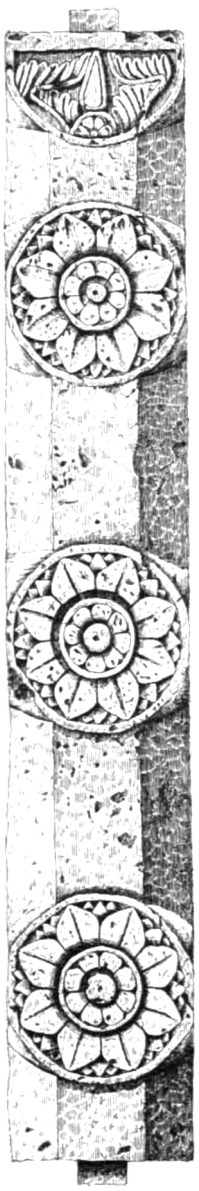
viś + su → viṭsu “in feces”

DEPALATALIZATION

The sound *j*, when it doesn't behave like *c*, will behave like *ś* in internal *sandhi*. You will just have to get used to these differences:

√*yuj* “join” *yuj* + *ta-* → *yukta-* “joined”

√*mṛj* “wipe” *mṛj* + *ta* → *mṛṣṭa-* “wiped”



DEPALATALIZATION

(Once again, this is because *j* sometimes represents an earlier velar consonant **k*, and sometimes represents an earlier palatovelar consonant **ǵ* — the latter, by the way, is the voiced equivalent of **k̑*, which gives us *ś* in Sanskrit. That's why *j* and *ś* pattern together in this way.)

DEPALATALIZATION

This also explains why some roots ending in *j* take *-na-* as their past participle (earlier velars), while others take *-ta-* (earlier palatovelars):

√ <i>bhuj</i> “curve”	bhuj + na- → bhugna- “curved”
√ <i>yaj</i> “sacrifice”	yaj + ta- → iṣṭa- “sacrificed”

DEPALATALIZATION

If you do end up with *-n-* after *c* or *j*, it is itself palatalized into *-ñ-*:

yāc + nā- → yācñā- “request”

yaj + na- → yajñā- “sacrifice”

DEPALATALIZATION

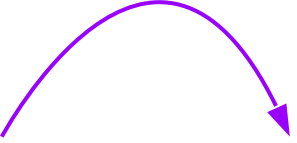
Finally, the final *ch* of \sqrt{prach} “ask” is really *ś*, so it acts like *ś* in internal *sandhi*:

$pr\underset{\cdot}{c}h + ta-$ ($pr\underset{\cdot}{ś} + ta-$) \rightarrow $pr\underset{\cdot}{ṣ}ṭa-$ “asked”

OTHER CORONALS

We've already seen that dental stops and nasals are converted into retroflexes under the influence of an immediately preceding retroflex (**progressive assimilation**):

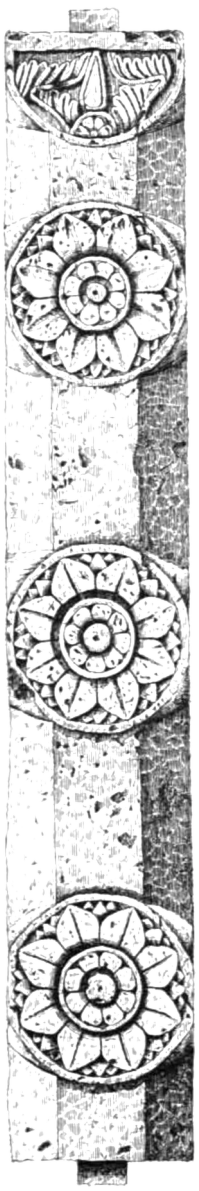
dviṣ + ta-



OTHER CORONALS

We've already seen that dental stops and nasals are converted into retroflexes under the influence of an immediately preceding retroflex (**progressive assimilation**):

dviṣ + ṭa-
“hated”



VOICE

While semivowels and nasals can directly adjoin either voiced or voiceless consonants, **two stop consonants** must have the same voice features, and if a stop consonant adjoins a sibilant, it must be voiceless.

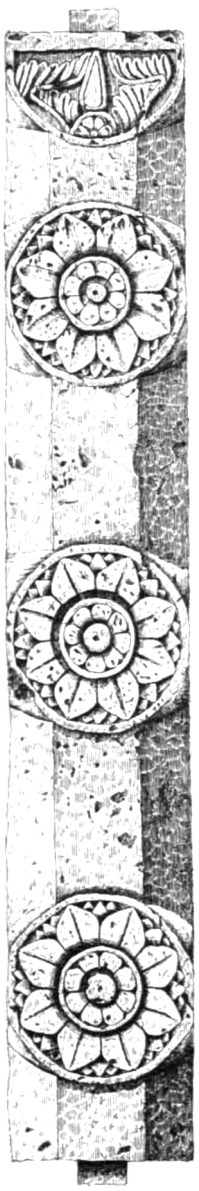
Thus when internal *sandhi* puts a voiced stop and voiceless stop together, you have to choose which one will “win.”

VOICE

The general rule for the assimilation of voicing is **regressive**. (Aspirates will be an exception!)

bhid + ti-





VOICE

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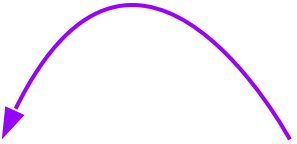
bhit + ti-

“wall” (lit. “partition”)

VOICE

The general rule for the assimilation of voicing is **regressive**. (Aspirates will be an exception!)

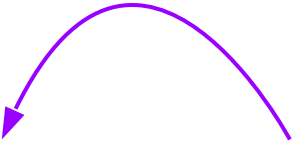
yuj + ta-



VOICE

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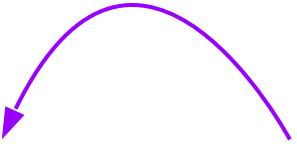
yug + ta-



VOICE

The general rule for the assimilation of voicing is **regressive**. (Aspirates will be an exception!)

yuk + ta-

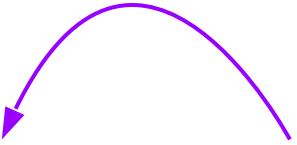


“joined”

VOICE

The general rule for the assimilation of voicing is **regressive**. (Aspirates will be an exception!)

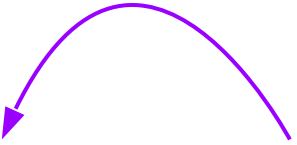
vac + dhi



VOICE

The general rule for the assimilation of voicing is **regressive**. (Aspirates will be an exception!)

vak + dhi



VOICE

The general rule for the assimilation of voicing is **regressive**. (Aspirates will be an exception!)

vag + dhi

“speak!”

ASPIRATION

Aspiration is also assimilated in groups of consonants (apart from nasals and semivowels). Generally the following will only ever apply to **voiced aspirates** followed by unaspirated consonants, since **voiceless aspirates** are almost always followed by an augment (*i*) when a suffix beginning with a consonant follows.

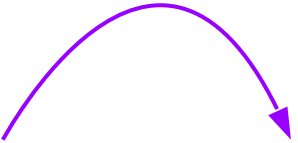
√*grath* “tie”

grath + ta- → grathita- “tied”

ASPIRATION

The voiced aspirate will spread both its **voicing** and its **aspiration** to a following stop, and generally only the last consonant is written as an aspirate (Ruppel calls this “Buddha *sandhi*”):

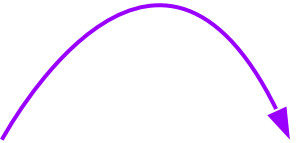
budh+ ta-



ASPIRATION

The voiced aspirate will spread both its **voicing** and its **aspiration** to a following stop, and generally only the last consonant is written as an aspirate (Ruppel calls this “Buddha *sandhi*”):

budh + dha-



ASPIRATION

The voiced aspirate will spread both its **voicing** and its **aspiration** to a following stop, and generally only the last consonant is written as an aspirate (Ruppel calls this “Buddha *sandhi*”):

bud + dha-

“awakened”

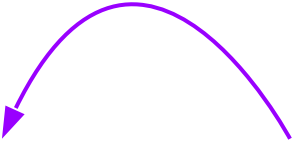
ASPIRATION

This rule is sometimes also known as “Bartholomae’s Law,” not because Christian Bartolomae discovered it, but because he used it to account for *sandhi* differences in Avestan, a language closely related to Sanskrit but which does not have aspirated consonants.

ASPIRATION

When an aspirate is followed by a sibilant, it loses its aspiration (and voice). In some cases the aspiration is “thrown back” onto a preceding voiced stop (Grassmann’s Law):

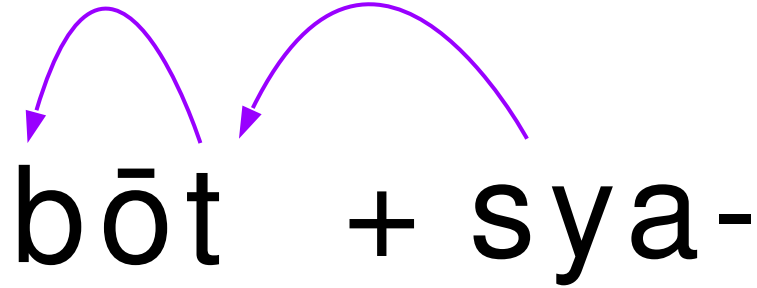
bōdh + sya-



ASPIRATION

When an aspirate is followed by a sibilant, it loses its aspiration (and voice). In some cases the aspiration is “thrown back” onto a preceding voiced stop (Grassmann’s Law):

bōt + sya-



ASPIRATION

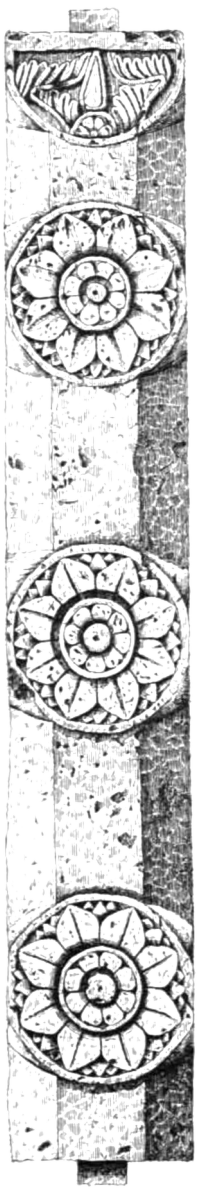
When an aspirate is followed by a sibilant, it loses its aspiration (and voice). In some cases the aspiration is “thrown back” onto a preceding voiced stop (Grassmann’s Law):

bhōt + sya-

“will awaken”

ASPIRATION

That's it!



ASPIRATION

Except for *h*. *H* has a couple of sources in Sanskrit:

- ❁ *bh* ($\sqrt{\text{grah}}$ “grab”)
- ❁ *dh* ($\sqrt{\text{nah}}$ “fasten”)
- ❁ *gh* ($\sqrt{\text{dah}}$ “burn”, $\sqrt{\text{snih}}$ “be oily”)
- ❁ *ḡh* ($\sqrt{\text{muh}}$ “be bewildered,” $\sqrt{\text{ruh}}$ “ascend,” $\sqrt{\text{guh}}$ “conceal”)

ASPIRATION

The first three shouldn't present much difficulty:

nah + ta- → naddha- "fastened"

dah + ta- → dagdha- "burned"

snih + ta- → snigdha- "glossy, oily"



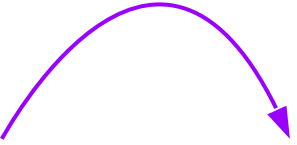
ASPIRATION

For the last, you probably were concerned that the sound zh doesn't exist in Sanskrit. It doesn't. But it's convenient to think of this sound as a voiced, aspirated, retroflex sibilant, because that's how it behaves in *sandhi* before it disappears:

ASPIRATION

First it aspirates, voices, and (if possible) retroflexes
a following stop:

muṣh + ta-



ASPIRATION

First it aspirates, voices, and (if possible) retroflexes
a following stop:

muṛh + ḍha-

ASPIRATION

First it aspirates, voices, and (if possible) retroflexes
a following stop:

muṣ + ḍha-

ASPIRATION

And then the remaining ṛ sound is lost, but as it is lost, it **lengthens the preceding vowel** (compensatory lengthening):

muṛ + ḍha-

ASPIRATION

And then the remaining ṛ sound is lost, but as it is lost, it **lengthens the preceding vowel** (compensatory lengthening):

mū + ḍha-

“confused”

