Morphological FST of Latin to Spanish

HIC:DARCVS. VADORVS:

LVXGLA DIVM· TENET:

NON:EGO· SVM·PATER· TVVS:

HIC:LVCIVS· CAELIAMBVLVS: IMO:NON·EST· VERVS:

JOHN TRUJILLO

THE GOAL

- Using solely regular morphological changes that occurred in the formation of Latin to Spanish

- Inputting a Spanish word and outputting its Latin etymon, could be applied vice-versa as well

- Etymological Dictionary

LATIN TO SPANISH

- We use three important, abstract factors: syllable structure, vowel quantity, and stress

- Following IPA structure

  - " . " separate syllable

  - " ' " stressed syllable

  - " : " long vowel; if absent, short vowel

FORMATTING

- *FĒMINA*
  - /ˈfeː.mi.na/

  - ˈfeː.mi.na

- FĔBRIS
  - /ˈfɛ.bris/

  - ˈfe.bris

GOING ABOUT IT

- FOMA

- Understanding regular expressions

- Delineating the historical morphological changes that occurred; chronologically important for FOMA

- Defining morphological rules

FOMA

- Finite State Toolkit used to construct Finite State Automata and Transducers (FSTs)

- Powerful tool when it comes to morphological analysis

- Escape literals and IPA notation

- Following a rough chronological order to be as accurate as possible

FORMATTING

- *FĒMINA*
  - /ˈfeː.mi.na/

  - ˈfeː.mi.na
    - ˈfe (%:) mi . na

- FĔBRIS
  - /ˈfɛ.bris/

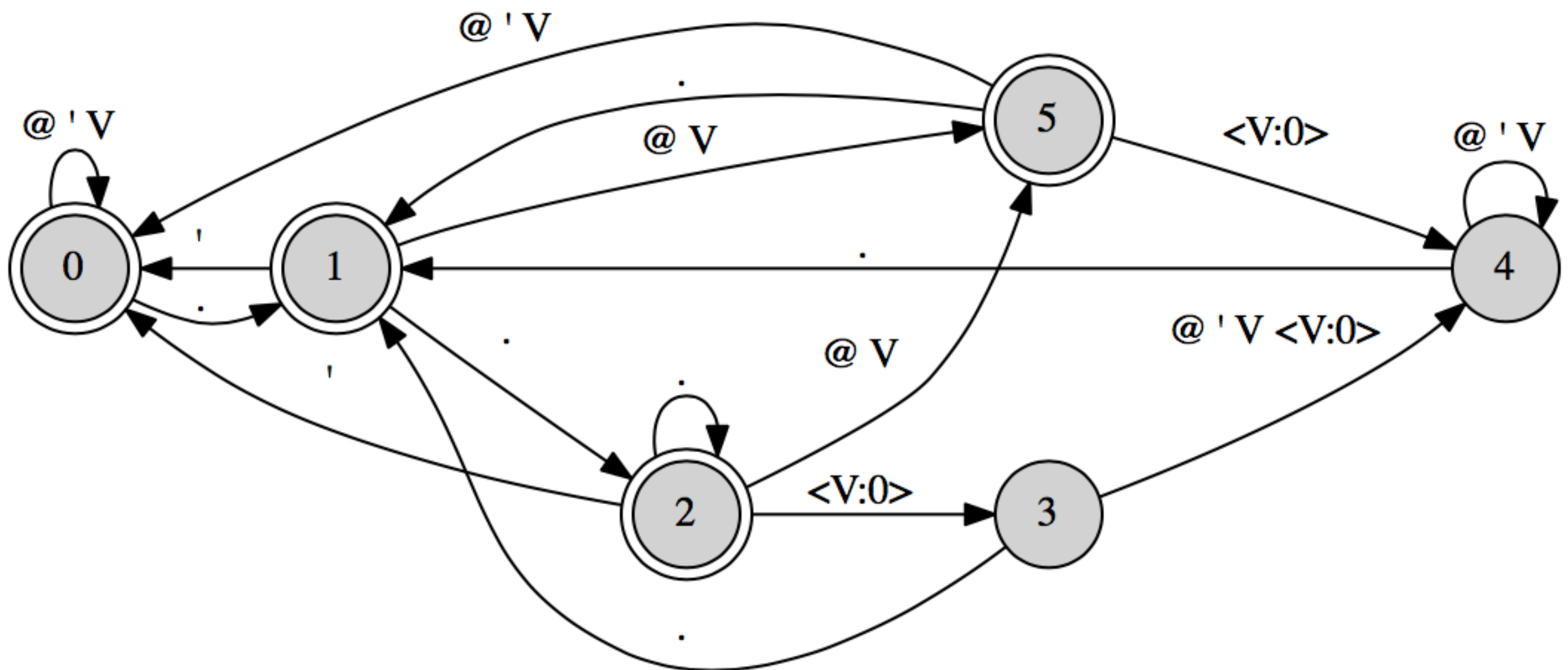 - ˈfe.bris
    - ˈfe . bris

GENERAL RULES

- Lenition

- Epenthesis

- Diphthongization

- **Syncope**

- Great Vowel Merger

SYNCOPE

- *English*
  - *Several*
  - *Funeral*

- Latin to Spanish
  - O.ʼRĬ.CU.LA
  - O.ʼRĬC.LA

```
define Syncope V (->) 0 || [ %. \' ] _ [?* %.] ;
```

EXAMPLES

```
[apply down> 'lac.te+N+Sg
 lagte
 leche
[apply down> o.'ri.cu.la+N+Sg
 orecola
 oregola
 oregla
 oreja
[apply down> spa.ta+N+Sg
 espata
 espada
[apply down> ru.ssu+N+Pl
 rojos
[apply down> 'fo.cu+N+Pl
 fuecos
 fuegos
```

```
[apply up> abeja
 a.'pi.cu.la+N+Sg ✓
[apply up> puesto
 'po.si:.to:+N+Sg ✓
[apply up> hembra
 'fe:.mi:.na+N+Sg
 'fe:.mi:.na+N+Sg ✓
[apply up> tiernos
 'te.no.ro:+N+Pl ✓
[apply up> horno
 'fo:.rno+N+Sg ✓
[apply up> liebres
 'le.po.re+N+Pl ✓
[apply up> orejas
 o.'ri.cu.la+N+Pl ✓
```

IT'S NOT IRREGULAR IF YOU KNOW THE PATTERN

- The majority of irregular verb conjugations in Spanish are due to completely regular stress patterns.

- These morphological rules apply to verbs as well and with more time will be able to properly be predicted.

IRREGULAR VERB EXAMPLE

PENSER	Singular	Plural
1P+Pres	ˈpien.so	pen.ˈsa.mos
2P+Pres	ˈpien.sas	pen.ˈsa:is
3P+Pres	ˈpien.sa	ˈpien.san