Strother-Garcia chapter 4: Syllable Representations

Notational Equivalence

What does it mean for different representations to be notationally equivalent?

Dot, Flat, and Tree Representations

Dot	**Flat**	**Tree**
pred	pred	pred
succ	succ	succ
features	features	features
dot	ons	ons
	nuc	nuc
	coda	coda
		σ
		parent

L-intepretability

A word model M_1 is L-interpretable in terms of another M_2 if one can write a transduction from M_1 to M_2 using logic L. If M_1 is L-interpretable in terms of another M_2 and vice versa, then we say the two are L-bi-interpretable.

Quantifier-Free Logic < First-Order Logic < Monadic Second Order Logic

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If two word models are QF-bi-interpretable it means that a weak logic can translate between them.

Contributions of this chapter

Every pair of models within {dot,flat,tree} representations are QF-bi-interpretable.

Strother-Garcia establishes this by providing:

1. A QF transduction for turning flat representations into tree ones.
2. A QF transduction for turning tree representations into flat ones.
3. A QF transduction for turning flat representations into dot ones.
4. A QF transduction for turning dot representations into flat ones.
5. The composition of QF transductions is a QF transduction.

Implications

1. The transductions between these different syllabic representations are relatively cheap.
2. These transductions also allow us to translate any constraint or statement

made in one representation to one made in another representation.

Further Questions

1. Are all QF-transductions created equal? Probably not. Even within the group of QF tranductions, we can identify "more expensive" ones from "less expensive" ones.
2. ...

