

# Tagmemics

*An Introduction to Linguistics for Perl  
Developers*

*or*

*"Wouldn't know a tagmeme if it bit me  
on the parse."*

*Allison Randal  
University of Portland  
YAPC::EU 2002*

## In the Beginning...

Wants pawn term dare worsted ladle gull hoe lift  
wetter murder inner ladle cordage honor itch offer  
lodge, dock, florist. Disk ladle gull orphan worry putty  
ladle rat cluck wetter ladle rat hut, an fur disk raisin  
pimple colder Ladle Rat Rotten Hut...

- Howard L. Chace, *Anguish Languish*



## Why Linguistics?

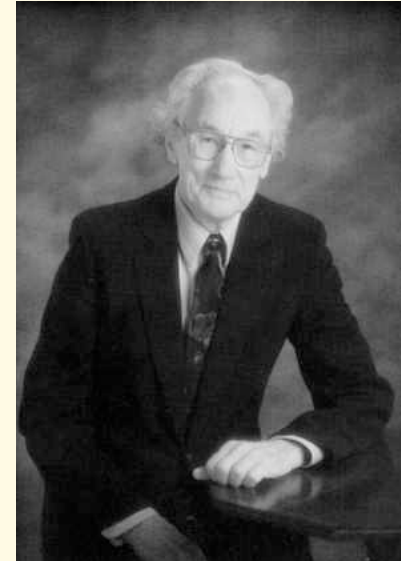
- Linguistics and Software Development?
- Linguistics is the study of language.
- Programming languages are human languages.
- It's the same brain.

## Why Tagmemics?

- Out of hundreds of theories, why this one?
- Understand Larry.
- Know your roots.
- Tagmemics is a practical theory.

## Who's Pike?

- Dr. Kenneth L. Pike,  
1912 - 2000
- Professor of Linguistics at the  
University of Michigan.
- President of the Linguistic  
Society of America and SIL  
International.



## Who's Pike?

- Nominated for the Nobel Peace Prize on 15 consecutive years.
- Also known for his entertaining stories, poetry and songs and his blue cape.
- He would fit right in the Perl community.



## Where and When

- Pike developed tagmemics while doing field research and teaching linguistics.
- He wanted a theory that was easy to learn and easy to use...
- ...but complex enough to explain real language.
- The Swiss-Army knife of linguistic theories.

## Language in Context

- Language cannot be separated from the human context in which it is used.
- Many linguistic theories are satisfied with structure alone.
- Those theories have no explanation for:

*Wants pawn term dare worsted ladle gull...*



## Particle, Wave and Field

- Any element can be analyzed in one of 3 ways:
  - Particle: each element is a discrete unit.
  - Wave: elements are defined by a nucleus.
  - Field: relationships between elements are what matters.

## Particle, Wave and Field

- The 3 analyses applied to "versions of Perl":
  - Particle: each version stands on its own.
  - Wave: a release is a nucleus, but development is continuous.
  - Field: versions contrast by their sets of features.

## What's a Tagmeme?

- A tagmeme is a unit-in-context.
- Tagmemes are fractal.
- A tagmeme has 4 parts: slot, role, class and cohesion.
- Don't get too tied up in the details...

# What's a Tagmeme?

Slot

Class

Role

Cohesion

## What's a Tagmeme?

Where does the unit  
go?

Slot

What kind of unit is it?

Class

Why is this unit here?

What's its function?

Role

How does this unit  
relate to other units  
and to the wider  
context?

Cohesion

## What's a Tagmeme?

Margin  
Subject

Noun Phrase

Actor

Obligatory

Number agreement  
with the verb

*The monkey bit me.*

## What's a Tagmeme?

Margin  
Subject

Pronoun

Actor

Obligatory

Number agreement  
with the verb

Case marking

*He bit me.*

## What's a Tagmeme?

Nucleus  
Predicate

Verb

Statement

Transitive

Number agreement  
with the subject  
Case marking

*The monkey **bit** me.*



# What's a Tagmeme?

Margin

Object

Pronoun

Undergoer

Obligatory

Case marking

*The monkey bit me.*

# What's a Tagmeme?

Nucleus  
Predicate

Verb (function)

Imperative

Obligatory

`print $animal;`

# What's a Tagmeme?

Margin

Object

Noun (variable)

Undergoer

Optional

```
print $animal;
```

# What's a Tagmeme?

Margin

Object

Noun (string)

Undergoer

Optional

```
print "antelope";
```

# What's a Tagmeme?

Margin

Object

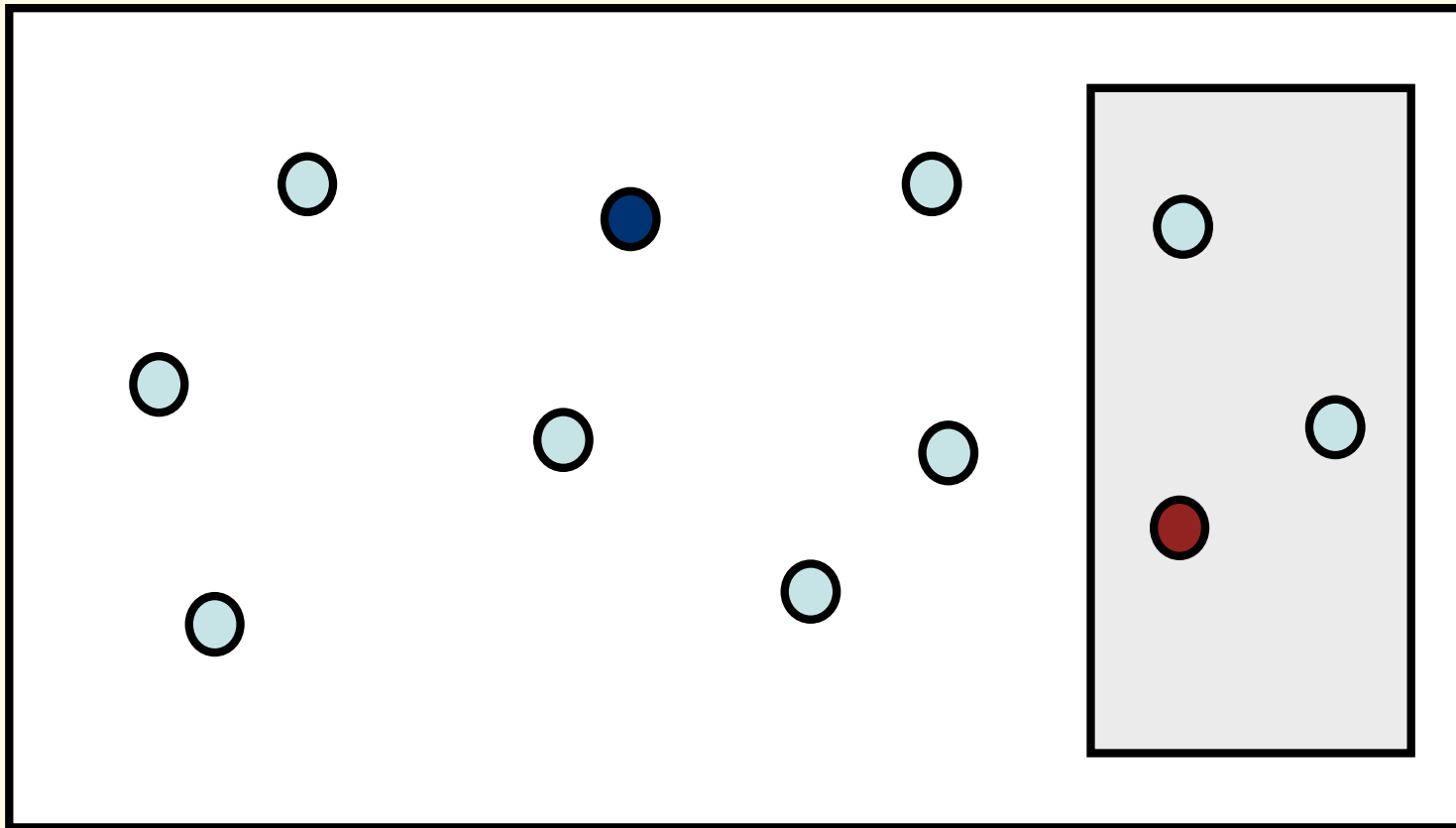
Statement

Undergoer

Optional

```
print join("\t", @animals);
```

# Etic and Emic



## Etic and Emic

- Two different perspectives on the same data.
- Etic is logical, alien, external, invented scientifically measurable.
- Emic is relative, native, internal, discovered, what matters to participants.

## Etic and Emic

- Etic is E.T.-ic.
- Emic is ME-ic.



## Etic and Emic

- An etic view of a television:
  - vaguely cubical, but irregular shape
  - dark color
  - dimensions range from inches to yards
  - one surface lighted with changing colors
  - emits sound

## Etic and Emic

- An emic view of a television:
  - the colors represent human activity
  - a connection to the world
  - or an escape
  - an education tool

## Etic and Emic

- An etic perspective on language design:
  - X number of control structures...
  - X number of forms to express them.

## Etic and Emic

- An emic perspective on language design:
  - Who is going to use it and how?
  - What other concepts are they going to be familiar with?
  - What will they learn easily?
  - What will be meaningful?
  - How will it relate to other aspects of the language?

# Re-analysis

```
switch (c) {  
    case '0':  
        zero++;  
        break;  
  
    case 'a':  
        alpha++;  
        break;  
  
    default:  
        nomatch++;  
        break;  
  
}
```

# Re-analysis

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given (c) {  
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# Re-analysis

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given (c) {  
  when '0':  
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# Re-analysis

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given (c) {  
  when '0' {  
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  }  
  when 'a' {  
    alpha++;  
    break;  
  }  
  default {  
    nomatch++;  
    break;  
  }  
}
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  }  
  default {  
    nomatch++;  
    break;  
  }  
}
```

# Re-analysis

```
given (c) {  
  when /glick/ {  
    zero++;  
    break;  
  }  
  when 'a' {  
    alpha++;  
    break;  
  }  
  default {  
    nomatch++;  
    break;  
  }  
}
```

# Re-analysis

```
given (c) {  
  when /glick/ {  
    zero++;  
    break;  
  }  
  when Acme::Snark {  
    alpha++;  
    break;  
  }  
  default {  
    nomatch++;  
    break;  
  }  
}
```

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given (c) {  
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# Re-analysis

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given (c) {  
  when /glick/ {  
    zero++;  
  }  
  when Acme::Snark {  
    alpha++;  
  }  
  default {  
    nomatch++;  
  }  
}
```

# Re-analysis

```
given ($c) {  
  when /glick/ {  
    $zero++;  
  }  
  when Acme::Snark {  
    $alpha++;  
  }  
  default {  
    $nomatch++;  
  }  
}
```

## Re-analysis

- Designing a language without considering that people are going to use it is about like designing a car without considering that people are going to drive it.

## Further Reading

Pike, Kenneth L. *Linguistic Concepts: An Introduction to Tagmemics*. Lincoln: University of Nebraska Press, 1982.

Pike, Kenneth L. *Tagmemics, Discourse and Verbal Art*. Ann Arbor: Michigan Studies in the Humanities, 1981.

*(Both titles are out of print, but they are available at several used book sellers online.)*