Perl 6 Design Philosophy

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• Every language is unique
• Design philosophy drives the shape of the language
• Better understand Perl 6
• Better understand all languages
• "Code smells"
• "Language smells"
Simplicity

• Simple is better
• Simple is easier
  – to teach
  – to learn
  – to remember
  – to use
  – to read
  – to parse
Simplicity

• Not all problems are simple
• "The Unlanguage"
• Choose your complexity
The Waterbed Theory
The Waterbed Theory
The Waterbed Theory

• Push it down...
The Waterbed Theory

• Push it down...
The Waterbed Theory

- Push it down...
- ...it rises on the other side
The Waterbed Theory

- Conservation of complexity
- Many operators:
  \[^\%+ !\@== ?/ \ *\*\~\* \_\_-\$\]
- Few operators:
  `assign(a, add(multiply(3,4), 5))`
- Find the balance
Reuse

• Repeated structures

```java
while (true) {
    # do something
}
```

```java
if (true) then
    # do something
end if
```

• Provides consistency
• Syntactic conventions
Distinction

• Small differences disappear
• If "cats" were "togs"
• Visual clues
  – eval and try
  – for and loop
  – sub and method
• Distinction vs. Reuse
Freedom

• Programmer freedom
• Customs, not laws
• Perl isn't a training bike
• Some things should be hard
• Freedom demands flexibility
Adaptability

- Change is natural
- Adjust to need
- Stay relevant
- Dead languages don't change
- Plan for change
- Features like:
  - modifiable parsing
  - core vs. user-defined
  - user-defined operators
Prominence

• All syntax is not created equal
• Some things stick out
• Use to your advantage
• BEGIN blocks (NAMED blocks)
• Modifier forms of if, unless, etc.

```perl
if ($blue) {
    print "True Blue.";
}

print "True Blue." if $blue;
```
• Lengthy bits at the end
  "I gave Mary the book"
  "I gave the book to Mary"
  "I gave the book about the history of the development of peanut-based products in Indonesia to Mary."

• Easier to read, easier to parse
  $line =~ m/^phone\s*\((\d{3})-?\(\d{3}\)-?\(\d{4}\))$/ix;
• Lengthy bits at the end
  "I gave Mary the book"
  "I gave the book to Mary"
  "I gave the book about the history of the development of peanut-based products in Indonesia to Mary."

• Easier to read, easier to parse
  \$line =~ m:i/^phone\s*\\d<3>)-?\\d<3>)-?\\d<4>$/;
• Do What I Mean
• DWIM not always DWYM
• Use the DWIM, Luke
• Targets
  – Perl programmers
  – English speakers
  1st, 2nd, 3rd also 1th, 2th, 3th
Borrowing

• Like "camouflage"
• Features for the taking
• Mutual respect
• Open thought
• Adoption with Adaptation
Perl Should Stay Perl

- What makes it Perl?
- True to designer's purpose
- Familiar
- Translatable
Long-Term Usability

- Not 2 years
- 20+ years
- Not fads or cute tricks
- Strong, dependable tools
- Not perfect, just a step
Summary

• Adaptable
• Freeing
• Simple...
• ...but complex
• Distinct...
• ...but consistent
• Borrow...
• ...but Perl-ishly
• Relevant now...
• ...and relevant then
• Programmer friendly
• More Perl
Questions?