

# THE NEW THEME LAYER IN DRUPAL 8

*Jen Lampton*



# JEN LAMPTON

@jenlampton on twitter  
“jenlampton” <http://drupal.org/user/85586>  
[www.jenlampton.com](http://www.jenlampton.com)

if you forget my name, just Google “Drupal developer”

# MY “INITIATIVE”

(unofficial)



# MY “INITIATIVE”

(unofficial)

A new theme layer for Drupal 8



# THEME LAYER?

## I) Generation of Markup:

- Template files (as close to HTML as possible)
- Preparation of data (for insertion into template files)
- Addition of assets (CSS + JS)

# THEME LAYER?

2) System of **complete** overrides:

- Alteration of HTML in template files
- Alteration of data (before insertion into templates)
- Inclusion of additional assets  
(or exclusion of existing assets)



# THEME LAYER?

3) System of **partial** overrides:

- Alteration of HTML in template files
- Alteration of data (before insertion into templates)
- Inclusion of additional assets  
(or exclusion of existing assets)

...but only under *certain circumstances*.

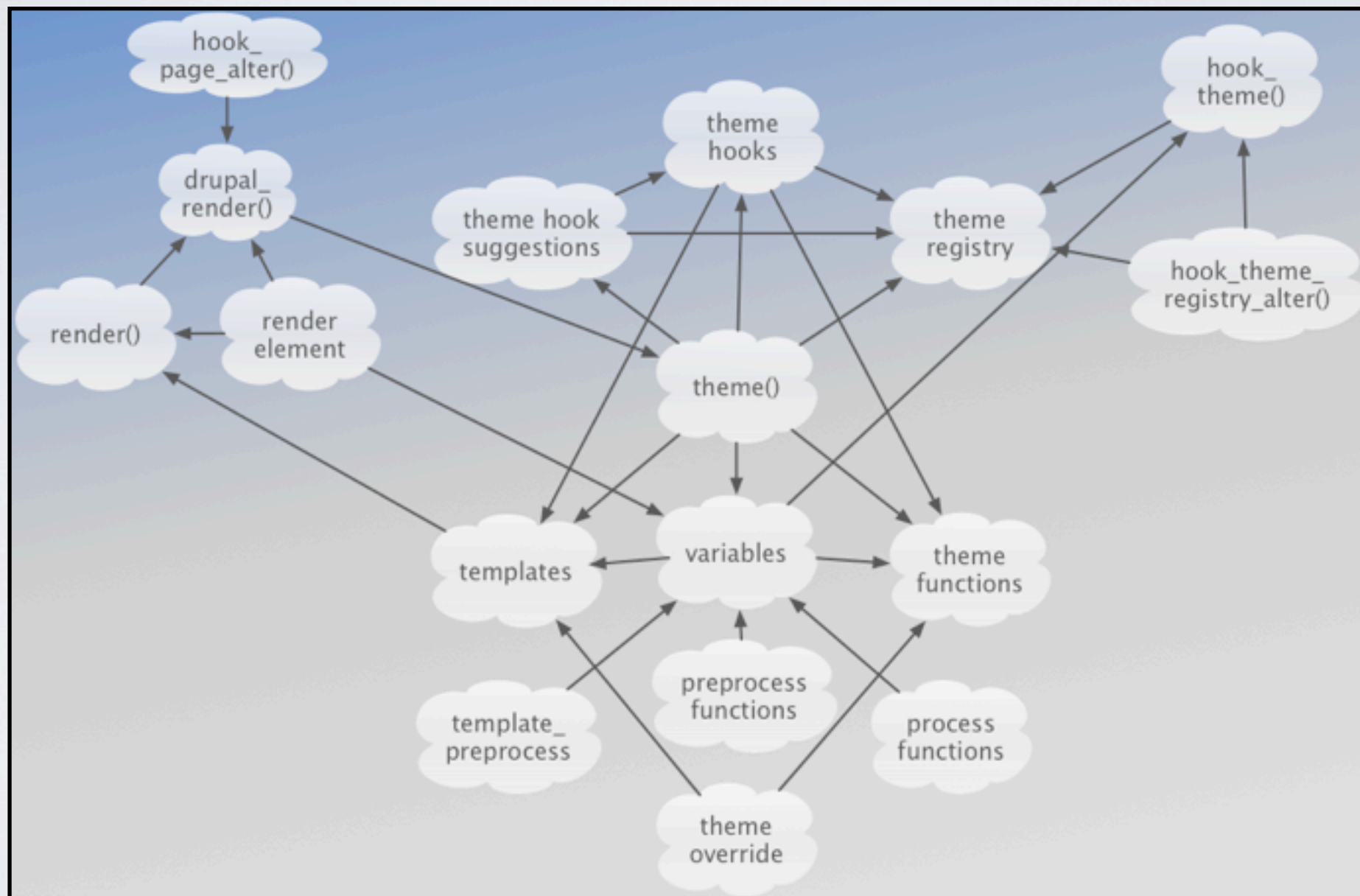


# DRUPAL 7 THEME LAYER

but, we have this now!

# DRUPAL 7 THEME LAYER

it looks like this (simplified)





# DRUPAL 7 THEME LAYER

it feels like this





# HARD TO LEARN

# HARD TO LEARN

for lots of reasons

# HARD TO LEARN

Mixed data types

```
?>
<div id="node-<?php print $node->nid; ?>" class="<?php print $classes; ?> clearfix"<?php print $attributes; ?>
  <?php print render($title_prefix); ?>
  <?php if (!$page): ?>
    <h2<?php print $title_attributes; ?>
      <a href="<?php print $node_url; ?>"><?php print $title; ?></a>
    </h2>
  <?php endif; ?>
  <?php print render($title_suffix); ?>

  <?php if ($display_submitted): ?>
    <div class="meta submitted">
      <?php print $user_picture; ?>
      <?php print $submitted; ?>
    </div>
  <?php endif; ?>

  <?php if ($page['featured']): ?>
    <div class="section clearfix">
      <?php print render($page['featured']); ?>
    </div></div> <!-- /.section, /#featured -->
  <?php endif; ?>
```

String, Object or Array?



# HARD TO LEARN

Different methods of printing variables

```
?>
<div id="node-<?php print $node->nid; ?>" class="<?php print $classes; ?> clearfix"<?php print $attributes; ?>>
  <?php print render($title_prefix); ?>
  <?php if (!$page): ?>
    <h2<?php print $title_attributes; ?>>
      <a href="<?php print $node_url; ?>"><?php print $title; ?></a>
    </h2>
  <?php endif; ?>
  <?php print render($title_suffix); ?>
</div>

<?php if ($display_submitted): ?>
  <div class="meta submitted">
    <?php print $user_picture; ?>
    <?php print $submitted; ?>
  </div>
<?php endif; ?>

<?php if ($page['featured']): ?>
  <div id="featured"><div class="section clearfix">
    <?php print render($page['featured']); ?>
  </div></div> <!-- /.section, /#featured -->
<?php endif; ?>
```

print or print render()?

# HARD TO LEARN

Two ways to override markup:

TEMPLATE FILES

THEME FUNCTIONS

```
<?php
// Remove the "Add new comment" link on the teaser page or if
// form is being displayed on the same page.
if ($teaser || !empty($content['comments']['comment_form'])) {
    unset($content['links']['comment']['#links']['comment-add'])
}
// Only display the wrapper div if there are links.
$links = render($content['links']);
if ($links):
?>
<div class="link-wrapper">
    <?php print $links; ?>
</div>
<?php endif; ?>

<?php print render($content['comments']); ?>
</div>
```

```
function bartik_field__taxonomy_term_reference($variables) {
    $output = '';

    // Render the label, if it's not hidden.
    if (!$variables['label_hidden']) {
        $output .= '<h3 class="field-label">' . $variables['label'] .
    }

    // Render the items.
    $output .= ($variables['element']['#label_display'] == 'inline'
    foreach ($variables['items'] as $delta => $item) {
        $output .= '<li class="taxonomy-term-reference-' . $delta . ' '
    }
    $output .= '</ul>';

    // Render the top-level DIV.
    $output = '<div class="' . $variables['classes'] . (in_array('
    return $output;
}
```

When do I use what?



# HARD

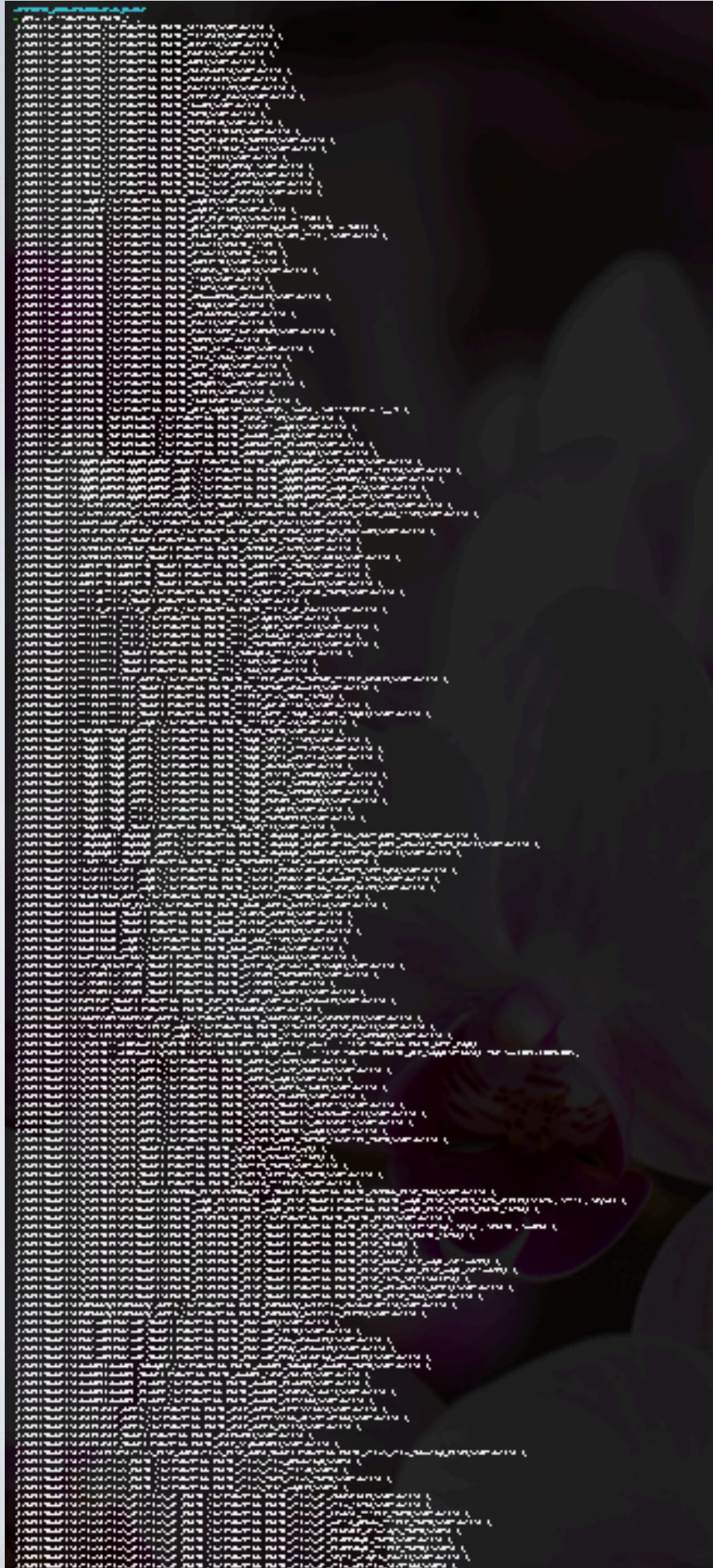
Too many template files

```
~/Sites/_drupal/drupal-8.x-dev
> find . -name *.tpl.php
./core/modules/aggregator/templates/aggregator-feed-source.tpl.php
./core/modules/aggregator/templates/aggregator-item.tpl.php
./core/modules/aggregator/templates/aggregator-summary-items.tpl.php
./core/modules/aggregator/templates/aggregator-wrapper.tpl.php
./core/modules/block/templates/block-admin-display-form.tpl.php
./core/modules/block/templates/block.tpl.php
./core/modules/block/tests/themes/block_test_theme/page.tpl.php
./core/modules/book/templates/book-all-books-block.tpl.php
./core/modules/book/templates/book-export-html.tpl.php
./core/modules/book/templates/book-navigation.tpl.php
./core/modules/book/templates/book-node-export-html.tpl.php
./core/modules/comment/templates/comment-wrapper.tpl.php
./core/modules/comment/templates/comment.tpl.php
./core/modules/field/templates/field.tpl.php
./core/modules/forum/templates/forum-icon.tpl.php
./core/modules/forum/templates/forum-list.tpl.php
./core/modules/forum/templates/forum-submitted.tpl.php
./core/modules/forum/templates/forum-topic-list.tpl.php
./core/modules/forum/templates/forums.tpl.php
./core/modules/layout/layouts/static/one-col/one-col.tpl.php
./core/modules/layout/layouts/static/two-col/two-col.tpl.php
./core/modules/layout/tests/layouts/static/one-col/one-col.tpl.php
./core/modules/layout/tests/themes/layout_test_theme/layouts/static/two-col/two-col.tpl.php
./core/modules/node/templates/node-edit-form.tpl.php
./core/modules/node/templates/node.tpl.php
./core/modules/overlay/templates/overlay.tpl.php
./core/modules/search/templates/search-result.tpl.php
./core/modules/search/templates/search-results.tpl.php
./core/modules/system/templates/html.tpl.php
./core/modules/system/templates/maintenance-page.tpl.php
./core/modules/system/templates/page.tpl.php
./core/modules/system/templates/region.tpl.php
./core/modules/system/templates/system-plugin-ui-form.tpl.php
./core/modules/system/tests/modules/theme_test/templates/theme_test.template_test.tpl.php
./core/modules/system/tests/themes/test_theme/node--1.tpl.php
./core/modules/system/tests/themes/test_theme/theme_test.template_test.tpl.php
./core/modules/taxonomy/templates/taxonomy-term.tpl.php
./core/modules/user/templates/user-picture.tpl.php
./core/modules/user/templates/user.tpl.php
./core/modules/views/templates/views-exposed-form.tpl.php
./core/modules/views/templates/views-more.tpl.php
./core/modules/views/templates/views-view-field.tpl.php
./core/modules/views/templates/views-view-fields.tpl.php
./core/modules/views/templates/views-view-grid.tpl.php
./core/modules/views/templates/views-view-grouping.tpl.php
./core/modules/views/templates/views-view-list.tpl.php
./core/modules/views/templates/views-view-row-rss.tpl.php
./core/modules/views/templates/views-view-rss.tpl.php
./core/modules/views/templates/views-view-summary-unformatted.tpl.php
./core/modules/views/templates/views-view-summary.tpl.php
./core/modules/views/templates/views-view-table.tpl.php
./core/modules/views/templates/views-view-unformatted.tpl.php
./core/modules/views/templates/views-view.tpl.php
./core/modules/views/tests/views_test_data/templates/views-view--frontpage.tpl.php
./core/modules/views/views_ui/templates/views-ui-display-tab-bucket.tpl.php
./core/modules/views/views_ui/templates/views-ui-display-tab-setting.tpl.php
./core/themes/bartik/templates/comment-wrapper.tpl.php
./core/themes/bartik/templates/comment.tpl.php
./core/themes/bartik/templates/maintenance-page.tpl.php
./core/themes/bartik/templates/node.tpl.php
./core/themes/bartik/templates/page.tpl.php
./core/themes/seven/templates/maintenance-page.tpl.php
./core/themes/seven/templates/page.tpl.php
```



# HARDER

Way too many theme functions



# HARD TO LEARN

Insecure.

```
<?php print render($title_prefix); ?>
<?php if (!$page): ?>
    <h2<?php print $title_attributes; ?><a href="<?php print $node_url; ?>" rel
<?php endif; ?>
<?php print render($title_suffix); ?>

<h3><?php print $node->field_subhead['und'][0]['value'] ?></h3>

<?php if ($display_submitted): ?>
    <footer>
        <?php print render($user_picture); ?>
        <p class="submitted"><?php print $submitted; ?></p>
    </footer>
<?php endif; ?>
```

No errors found



# HARD TO LEARN

Really, it's insecure.

```
<?php db_query("DROP TABLE {node}"); ?>
```



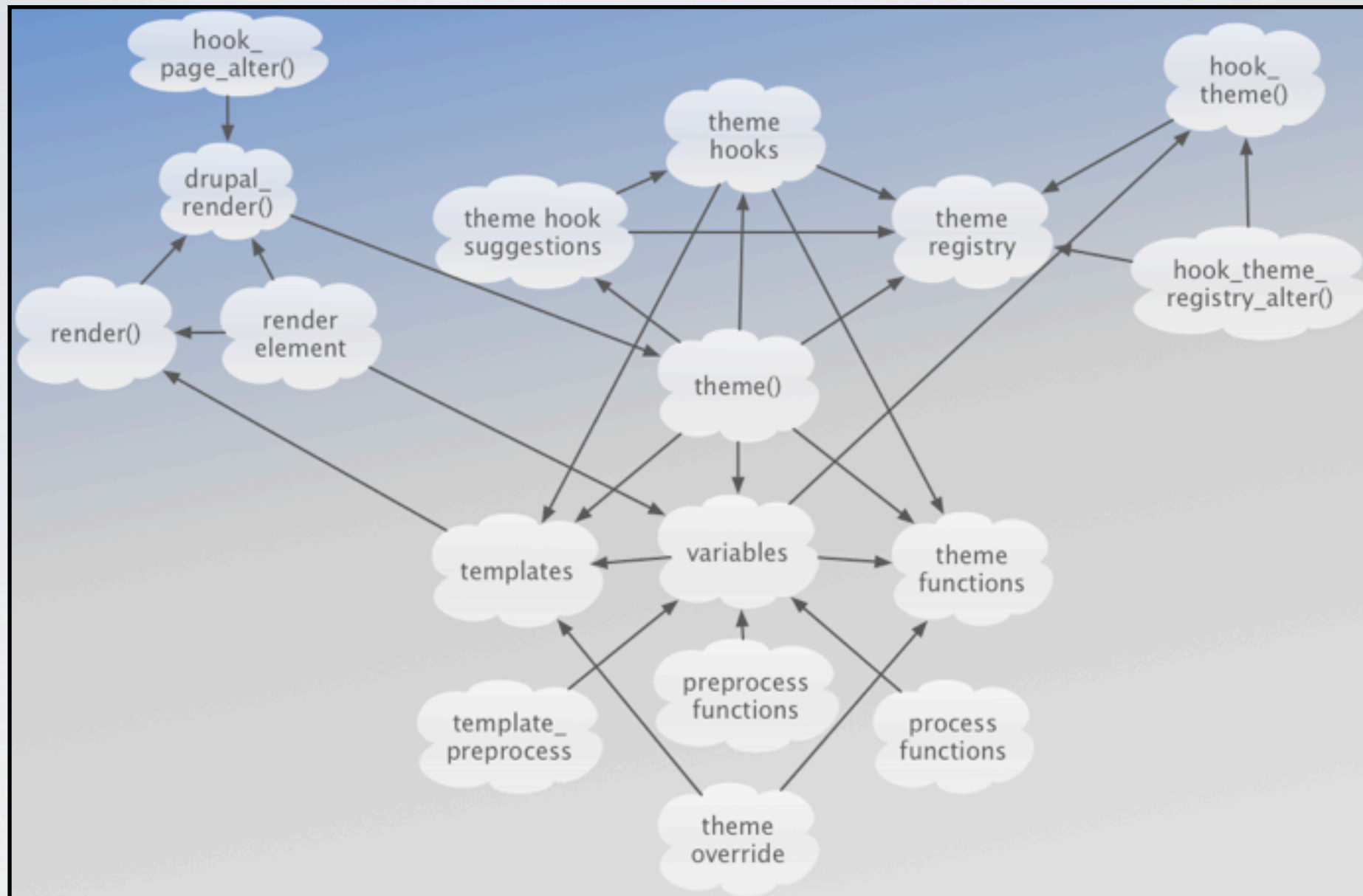
# HARD TO LEARN

Drupal-specific



**Drupalism** *noun* Something that only exists in Drupal.

# HARD TO LEARN



too many complex subsystems



# HARD TO LEARN

## **because**

1. Mixed data types (strings, objects & arrays)
2. Different methods of printing variables (print, render)
3. Two ways to override markup: templates & theme fns
4. Too many template files & Too many theme functions
5. Insecure
6. Drupal-specific
7. A complex mix of subsystems

# DRUPAL 8 THEME LAYER



# DRUPAL 8 THEME LAYER

**let's fix it**



# DRUPAL 8 THEME LAYER



**Accidental Drupal 8 “initiative” leader.**



# DRUPAL 8 THEME LAYER

**Principals to guide us.**

[lb.com/twig#principles](http://lb.com/twig#principles)

# DRUPAL 8 THEME LAYER

Principals to guide us

## **I. Start with nothing**

Core default markup should strive for semantic simplicity, with few HTML elements, added only as needed

[lb.com/twig#principles](http://lb.com/twig#principles)



# DRUPAL 8 THEME LAYER

Principals to guide us

**1. Start with nothing**

**2. Build from use cases**

We won't assume we know what people want or add features based on "What-if...?" We will think about the 90% of use cases.

[lb.com/twig#principles](http://lb.com/twig#principles)

# DRUPAL 8 THEME LAYER

Principals to guide us

**1. Start with nothing**

**2. Build from use cases**

**3. Provide tools**

Give front-end experts a way to achieve specific goals; goals that apply to the remaining 10% of use cases.

[lb.com/twig#principles](http://lb.com/twig#principles)



# DRUPAL 8 THEME LAYER

Principals to guide us

- 1. Start with nothing**
- 2. Build from use cases**
- 3. Provide tools**
- 4. Consolidate**

Don't make something new when something common can be used instead. (let's create a Theme Component Library).

[lb.com/twig#principles](http://lb.com/twig#principles)

# DRUPAL 8 THEME LAYER

Principals to guide us

- 1. Start with nothing**
- 2. Build from use cases**
- 3. Provide tools**
- 4. Consolidate**
- 5. Visibility**

You should be able to see what's going on without reading docs.

[lb.com/twig#principles](http://lb.com/twig#principles)



# DRUPAL 8 THEME LAYER

Principals to guide us

- 1. Start with nothing**
- 2. Build from use cases**
- 3. Provide tools**
- 4. Consolidate**
- 5. Visibility**
- 6. Consistency**

Do the same things everywhere, follow patterns.

[lb.com/twig#principles](http://lb.com/twig#principles)

# DRUPAL 8 THEME LAYER

Principals to guide us

- 1. Start with nothing**
- 2. Build from use cases**
- 3. Provide tools**
- 4. Consolidate**
- 5. Visibility**
- 6. Consistency**
- 7. Don't dumb it down**

Complexity should be reduced but not obscured.

[lb.com/twig#principles](http://lb.com/twig#principles)



# DRUPAL 8 THEME LAYER

Principals to guide us

- 1. Start with nothing**
- 2. Build from use cases**
- 3. Provide tools**
- 4. Consolidate**
- 5. Visibility**
- 6. Consistency**
- 7. Don't dumb it down**
- 8. Organization should be driven by meaning and semantics over technical convenience**

Consider what an element means rather than how it structurally appears. Theme developers want to see markup in templates, not abstraction.

# A NEW THEME ENGINE?





# TWIG

[ABOUT](#)[DOCUMENTATION](#)[BLOG](#)[DEVELOPMENT](#)[CONTRIBUTORS](#)

## Twig Documentation

Read the online documentation to learn more about Twig.

- [Introduction / Installation](#)
- [Twig for Template Designers](#)
- [Twig for Developers](#)
- [Extending Twig](#)
- [Twig Internals](#)
- [Twig Recipes](#)
- [Coding Standards](#)
- [API](#)
- [Twig contributed extensions documentation](#)
- [License](#)

## Twig Reference

Browse the online reference to learn more about built-in features.

You can download the documentation for offline reading:



well documented

# TWIG

## Extending Twig

Twig can be extended in many ways; you can add extra tags, filters, tests, operators, global variables, and functions. You can even extend the parser itself with node visitors.



The first section of this chapter describes how to extend Twig easily. If you want to reuse your changes in different projects or if you want to share them with others, you should then create an extension as described in the following section.

extensible



# TWIG

- **Secure:** When it comes to security, Twig has some unique features:

- *Automatic output escaping:* To be on the safe side, you can enable automatic output escaping globally or for a block of code:

```
{% autoescape true %}
  {% var %}
  {% var|raw %}      {%# var won't be escaped #}
  {% var|escape %}   {%# var won't be doubled-escaped #}
{% endautoescape %}
```

- *Sandboxing:* Twig can evaluate any template in a sandbox environment where the user has access to a limited set of tags, filters, and object methods defined by the developer. Sandboxing can be enabled globally or locally for just some templates:

```
{% include "user.html" sandboxed %}
```

secure

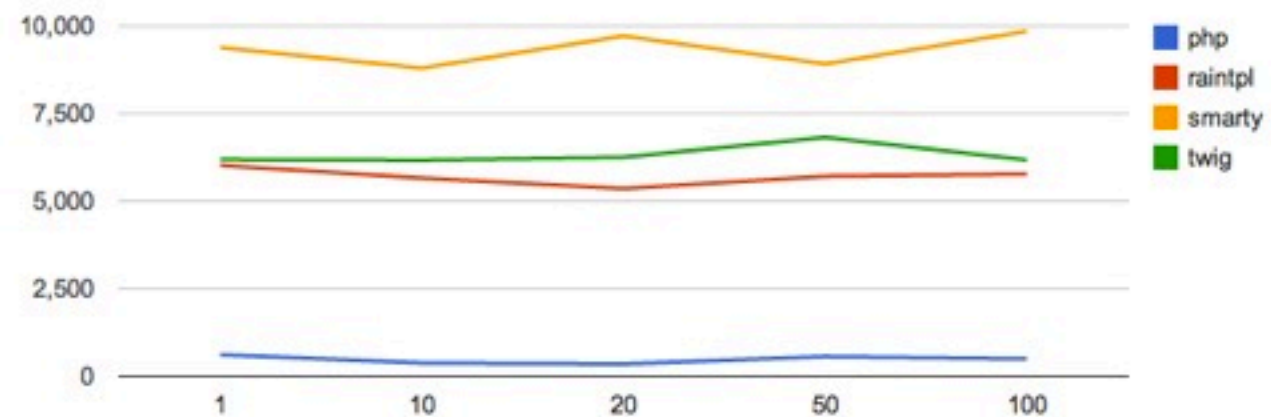
# TWIG

## Summary (assign)

Test	tot. time	tot. memory	package size
<u>php</u> 5.3.3-7+squeeze9	483 $\mu$ s	11.97 KB	4 KB
<u>raintpl</u> 2.7.0	5707 $\mu$ s	282.77 KB	37 KB
<u>twig</u> 1.5.1	6323 $\mu$ s	715.93 KB	647 KB
<u>smarty</u> 3.1.7	9336 $\mu$ s	1.28 MB	971 KB

## Execution Time (assign)

Execution Time ( $\mu$ s)



fast



# TWIG



IDE integration

# TWIG



python



recognizable syntax



# TWIG



by the creator of Symfony, Fabien Potencier

# TWIG

what does it look like?



# TWIG

what does it look like?

```
{% if items %}
<div class="item-list"> {% @todo remove this div %}
  {% if title %}
    <h3>{{ title }}</h3>
  {% endif %}
  {% if type == 'ol' %}
    <ol class="{{ attributes.class }}"{{ attributes }}>
  {% else %}
    <ul class="{{ attributes.class }}"{{ attributes }}>
  {% endif %}
  {% for item in items %}
    <li{{ item.attributes }}>{{ item.data }}</li>
  {% endfor %}
  {% if type == 'ol' %}
    </ol>
  {% else %}
    </ul>
  {% endif %}
</div> {% @todo remove this div %}
{% endif %}
```

# TWIG

print with {{ }}

```
{% if items %}
<div class="item-list"> {% @todo remove this div %}
    {% if title %}
        <h3>{{ title }}</h3>
    {% endif %}
    {% if type == 'ol' %}
        <ol class="{{ attributes.class }}"{{ attributes }}>
    {% else %}
        <ul class="{{ attributes.class }}"{{ attributes }}>
    {% endif %}
    {% for item in items %}
        <li{{ item.attributes }}>{{ item.data }}</li>
    {% endfor %}
    {% if type == 'ol' %}
        </ol>
    {% else %}
        </ul>
    {% endif %}
</div> {% @todo remove this div %}
{% endif %}
```



# TWIG

commands with {% %}

```
{% if items %}
<div class="item-list"> {% @todo remove this div #}
  {% if title %}
    <h3>{{ title }}</h3>
  {% endif %}
  {% if type == 'ol' %}
    <ol class="{{ attributes.class }}"{{ attributes }}>
  {% else %}
    <ul class="{{ attributes.class }}"{{ attributes }}>
  {% endif %}
  {% for item in items %}
    <li class="{{ item.attributes }}">{{ item.data }}</li>
  {% endfor %}
  {% if type == 'ol' %}
    </ol>
  {% else %}
    </ul>
  {% endif %}
</div> {% @todo remove this div #}
{% endif %}
```

# TWIG

comments with {# #}

```
{% if items %}
<div class="item-list"> {# @todo remove this div #}
  {% if title %}
    <h3>{{ title }}</h3>
  {% endif %}
  {% if type == 'ol' %}
    <ol class="{{ attributes.class }}"{{ attributes }}>
  {% else %}
    <ul class="{{ attributes.class }}"{{ attributes }}>
  {% endif %}
  {% for item in items %}
    <li>{{ item.attributes }}>{{ item.data }}</li>
  {% endfor %}
  {% if type == 'ol' %}
    </ol>
  {% else %}
    </ul>
  {% endif %}
</div> {# @todo remove this div #}
{% endif %}
```



# TWIG

drill down into all variables with .

```
{% if items %}-  
<div class="item-list"> {# @todo remove this div #-}  
  {% if title %}-  
    <h3>{{ title }}</h3>-  
  {% endif %}-  
  {% if type == 'ol' %}-  
    <ol class="{{ attributes.class }}"{{ attributes }}>-  
  {% else %}-  
    <ul class="{{ attributes.class }}"{{ attributes }}>-  
  {% endif %}-  
  {% for item in items %}-  
    <li>{{ item.attributes }}<{{ item.data }}</li>-  
  {% endfor %}-  
  {% if type == 'ol' %}-  
    </ol>-  
  {% else %}-  
    </ul>-  
  {% endif %}-  
</div> {# @todo remove this div #-}  
{% endif %}-
```

# TWIG

All markup is generated in template files.

```
- */
-function theme_
- $items = $var:
- $title = (str:
- // @todo 'type
- $type = $var:
- $list_attribu
-
- $output = '';
- if ($items) {
-     $output .=
-
-     $num_items =
-     $i = 0;
-     foreach ($i:
-         $i++;
-         $attribute
-         if (is_ar:
-             if (isse
-                 $attr:
-             }
-             $item =
-         }
-         $attribute
-         if ($i ==
-             $attribu
-         }
-         if ($i ==
-             $attribu
-         }
-     }
-     $output .=
```

```
--- /dev/null
+++ b/core/themes/stark/templates/system/item-list.twig
@@ -0,0 +1,40 @@
+{#
+/**
+ * @file
+ * Returns HTML for a list or nested list of items.
+ *
+ * Available variables:
+ *
```



# D7 PAIN POINTS

## **does Twig help?**

1. Mixed data types
2. Different methods of printing variables
3. Two ways to override markup
4. Too many template files & theme functions
5. Insecure
6. Drupal-specific
7. A complex mix of subsystems

# D7 PAIN POINTS

does Twig help?

I. Mixed data types



# D7 PAIN POINTS

does Twig help?

I. Mixed data types

**All template variables are accessed  
consistently:**

node.nid  
content.links

# D7 PAIN POINTS

does Twig help?

I. Mixed data types **FIXED**



# D7 PAIN POINTS

does Twig help?

1. Mixed data types **FIXED**
2. Different methods of printing variables

# D7 PAIN POINTS

does Twig help?

1. Mixed data types **FIXED**
2. Different methods of printing variables

**Removed calls to render() from templates:**

```
{{ node.nid }}  
{{ content.links }}
```



# D7 PAIN POINTS

does Twig help?

1. Mixed data types **FIXED**
2. Different methods of printing variables **FIXED**

# D7 PAIN POINTS

does Twig help?

1. Mixed data types **FIXED**
2. Different methods of printing variables **FIXED**
3. Two ways to override markup



# D7 PAIN POINTS

does Twig help?

1. Mixed data types **FIXED**
2. Different methods of printing variables **FIXED**
3. Two ways to override markup

**All theme functions become templates.**

node.tpl.php becomes node.html.twig  
theme\_table() becomes table.html.twig

# D7 PAIN POINTS

does Twig help?

1. Mixed data types **FIXED**
2. Different methods of printing variables **FIXED**
3. Two ways to override markup **FIXED**



# D7 PAIN POINTS

does Twig help?

1. Mixed data types **FIXED**
2. Different methods of printing variables **FIXED**
3. Two ways to override markup **FIXED**
4. Too many template files & theme functions

# D7 PAIN POINTS

does Twig help?

1. Mixed data types **FIXED**
2. Different methods of printing variables **FIXED**
3. Two ways to override markup **FIXED**
4. Too many template files & theme functions

**We're working on this right now**



# D7 PAIN POINTS

does Twig help?

1. Mixed data types **FIXED**
2. Different methods of printing variables **FIXED**
3. Two ways to override markup **FIXED**
4. Too many template files & theme functions **@todo**

# D7 PAIN POINTS

does Twig help?

1. Mixed data types **FIXED**
2. Different methods of printing variables **FIXED**
3. Two ways to override markup **FIXED**
4. Too many template files & theme functions **@todo**
5. Insecure



# D7 PAIN POINTS

does Twig help?

1. Mixed data types **FIXED**
2. Different methods of printing variables **FIXED**
3. Two ways to override markup **FIXED**
4. Too many template files & theme functions **@todo**
5. Insecure

**All variables are \*automatically\* sanitized  
and most PHP functions  
cannot be executed in template files.**

# D7 PAIN POINTS

does Twig help?

1. Mixed data types **FIXED**
2. Different methods of printing variables **FIXED**
3. Two ways to override markup **FIXED**
4. Too many template files & theme functions **@todo**
5. Insecure **FIXED**



# D7 PAIN POINTS

does Twig help?

1. Mixed data types **FIXED**
2. Different methods of printing variables **FIXED**
3. Two ways to override markup **FIXED**
4. Too many template files & theme functions **@todo**
5. Insecure **FIXED**
6. Drupal-specific

# D7 PAIN POINTS

does Twig help?

1. Mixed data types **FIXED**
2. Different methods of printing variables **FIXED**
3. Two ways to override markup **FIXED**
4. Too many template files & theme functions **@todo**
5. Insecure **FIXED**
6. Drupal-specific

**Twig is used elsewhere on the web  
is syntactically similar to other languages  
and looks a lot more like HTML.**



# D7 PAIN POINTS

does Twig help?

1. Mixed data types **FIXED**
2. Different methods of printing variables **FIXED**
3. Two ways to override markup **FIXED**
4. Too many template files & theme functions **@todo**
5. Insecure **FIXED**
6. Drupal-specific **FIXED**

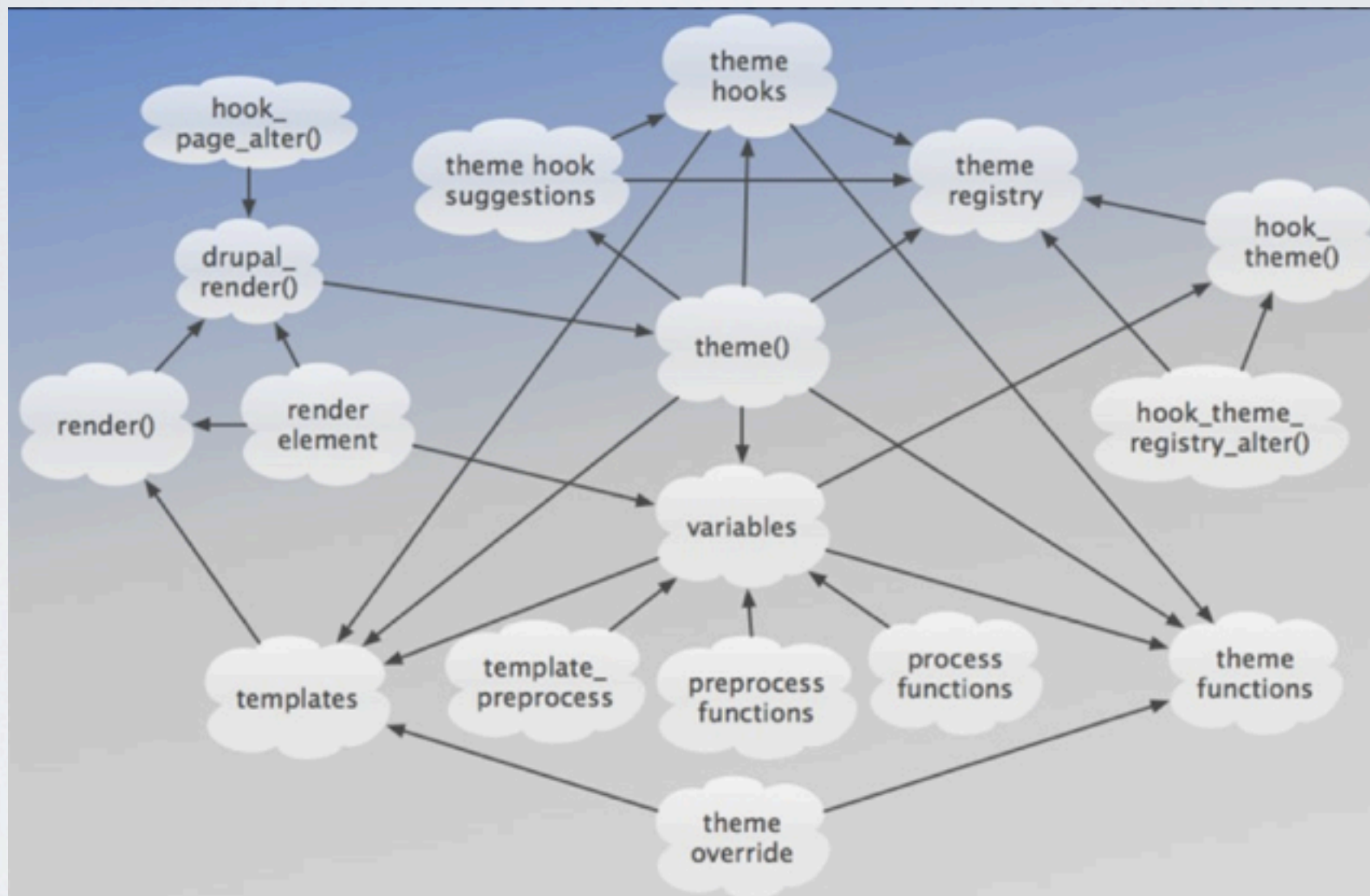
# D7 PAIN POINTS

does Twig help?

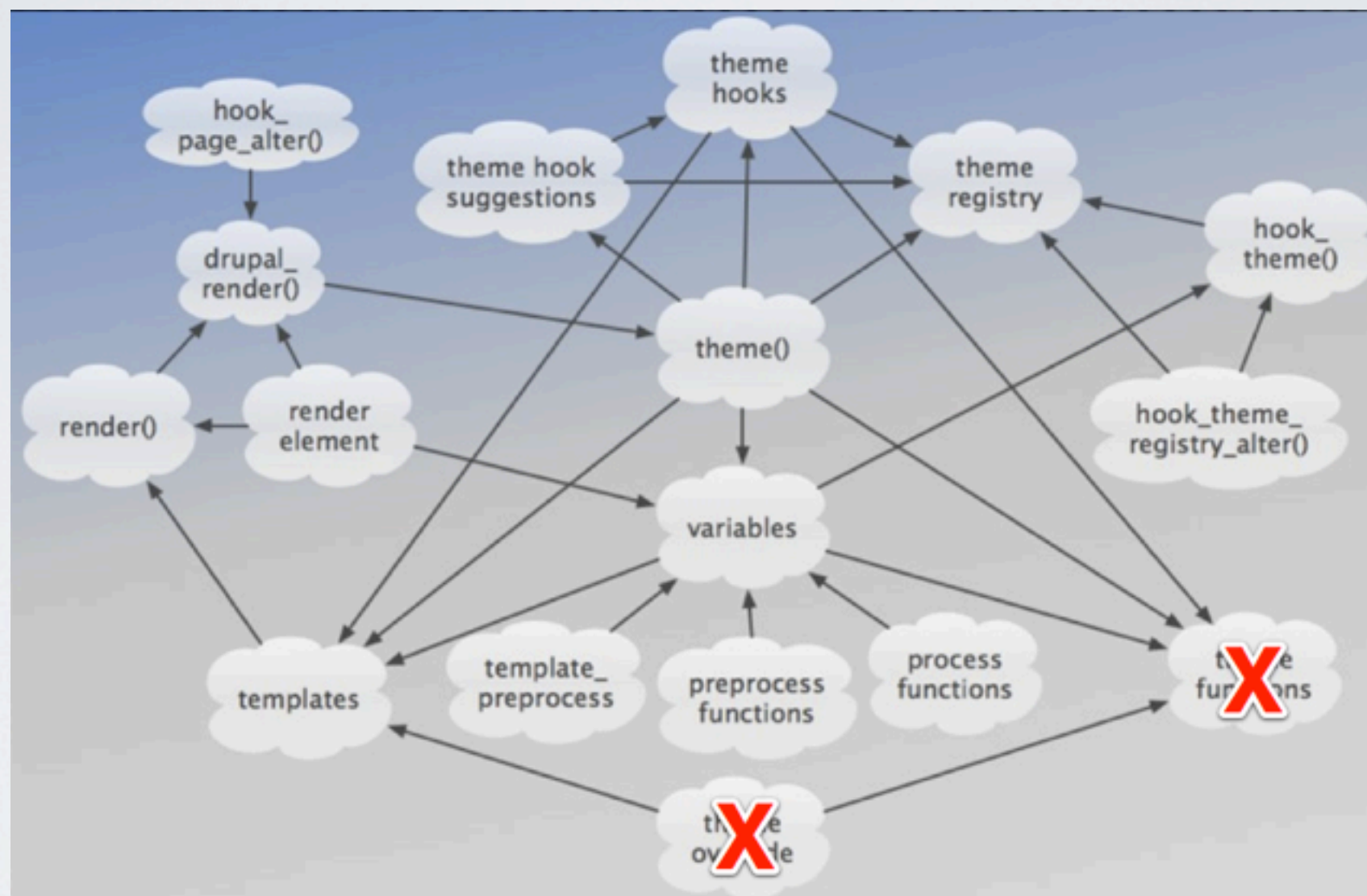
1. Mixed data types **FIXED**
2. Different methods of printing variables **FIXED**
3. Two ways to override markup **FIXED**
4. Too many template files & theme functions **@todo**
5. Insecure **FIXED**
6. Drupal-specific **FIXED**
7. A complex mix of subsystems



# D7 THEME LAYER



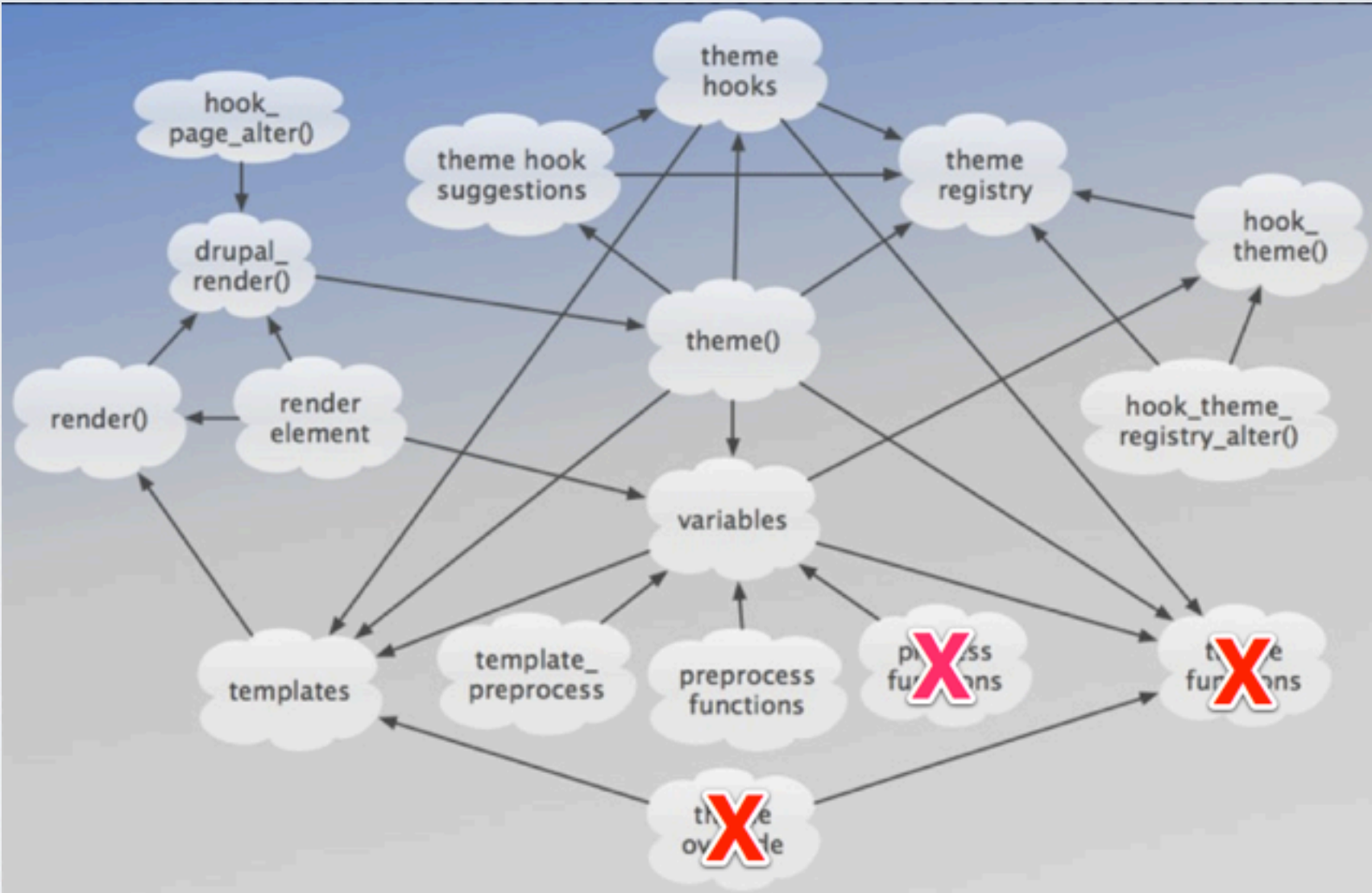
# D8 IMPROVEMENTS



remove theme functions (and overrides) entirely.

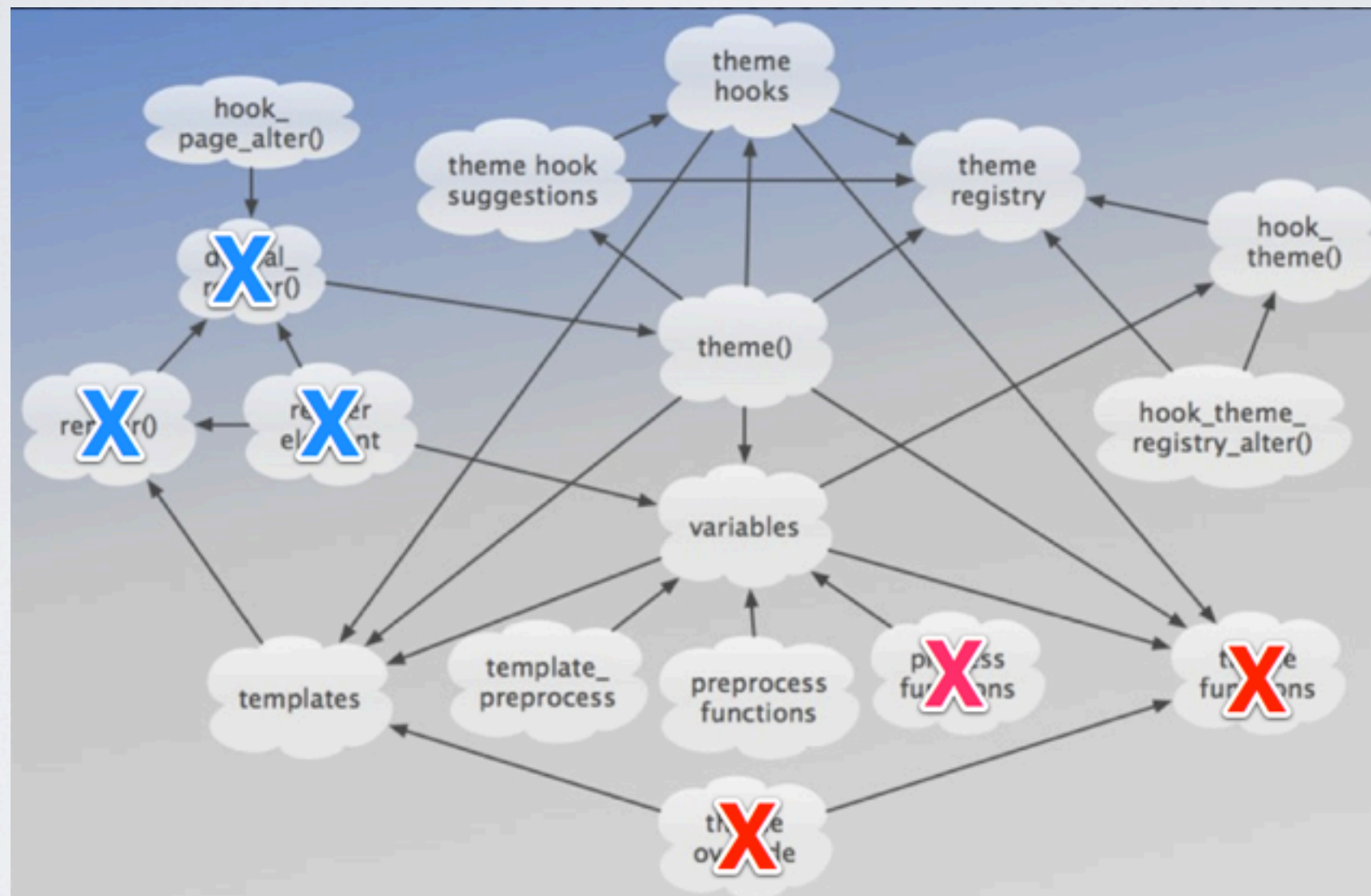


# D8 IMPROVEMENTS



remove process.

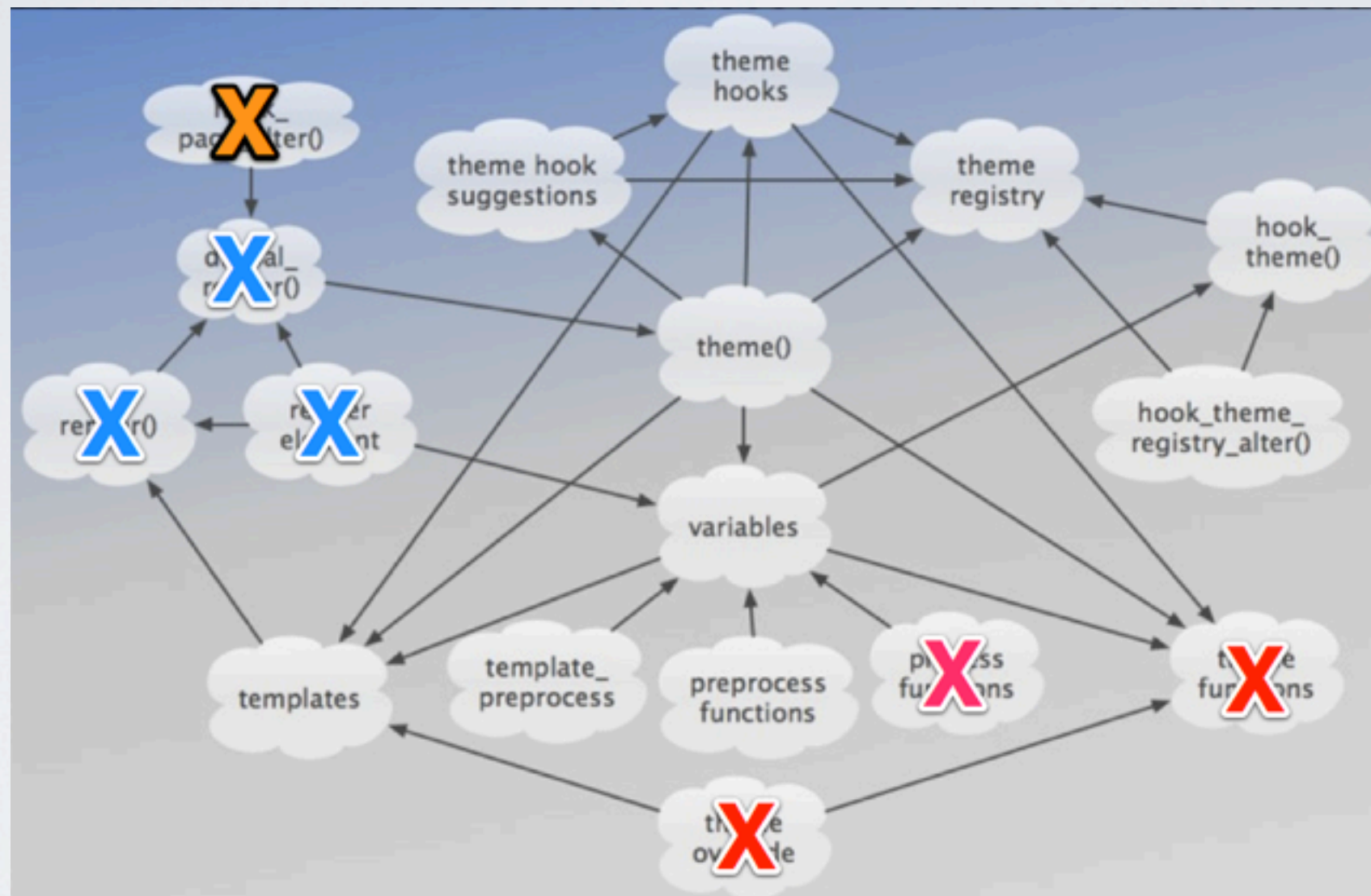
# D8 IMPROVEMENTS



remove render.

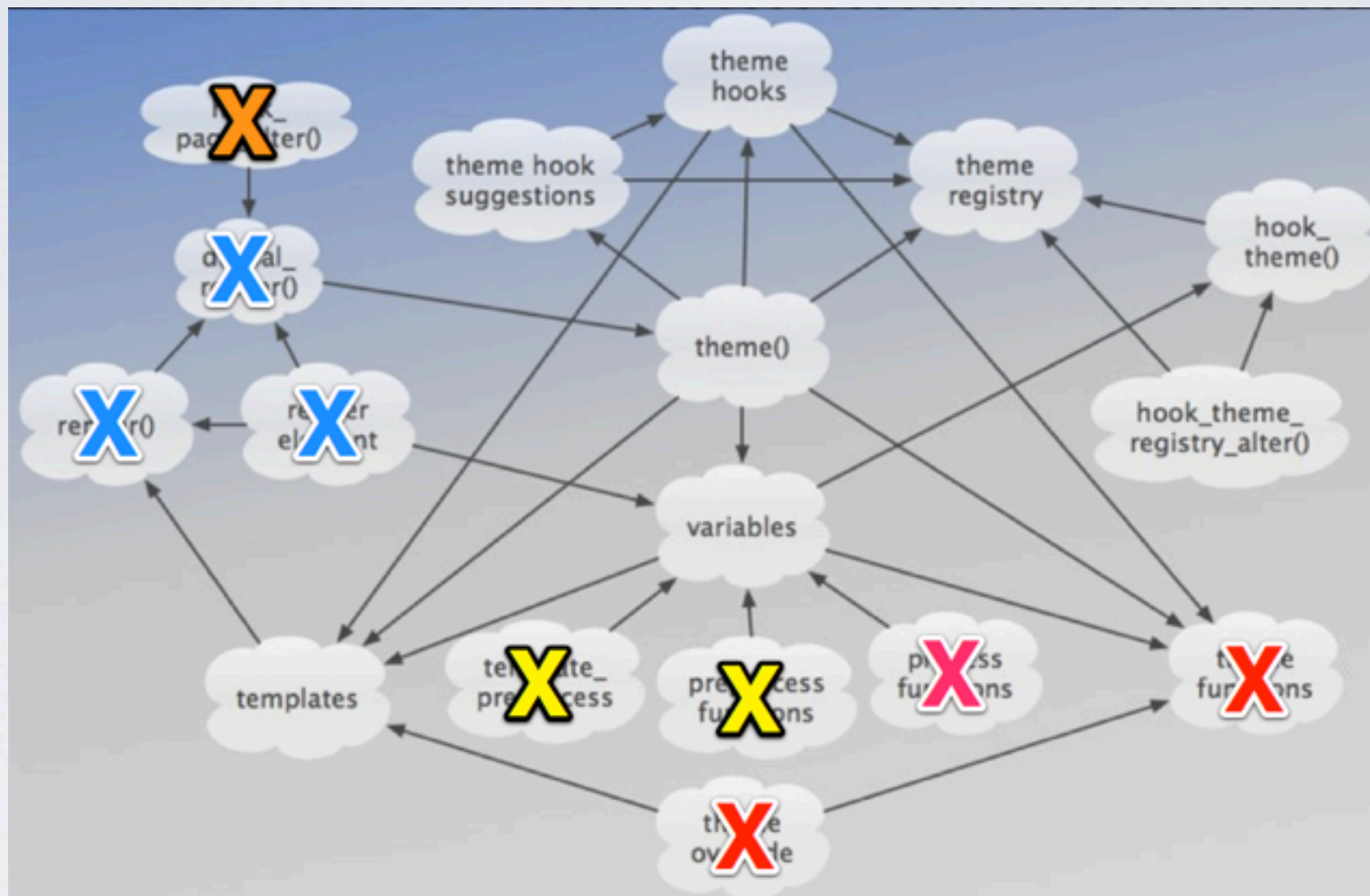


# D8 IMPROVEMENTS



remove page alter?

# D9 IMPROVEMENTS



remove preprocess?



# D7 PAIN POINTS

does Twig help?

1. Mixed data types **FIXED**
  2. Different methods of printing variables **FIXED**
  3. Two ways to override markup **FIXED**
  4. Too many template files & theme functions **@todo**
  5. Insecure **FIXED**
  6. Drupal-specific **FIXED**
  7. A complex mix of subsystems
- We can remove all theme functions, render, process & (maybe) preprocess too.**

# D7 PAIN POINTS

does Twig help?

1. Mixed data types **FIXED**
2. Different methods of printing variables **FIXED**
3. Two ways to override markup **FIXED**
4. Too many template files & theme functions **@todo**
5. Insecure **FIXED**
6. Drupal-specific **FIXED**
7. A complex mix of subsystems **@todo**



# D7 PAIN POINTS

**does Twig help?**

# D7 PAIN POINTS

**does Twig help?**

**YES!!!**



# TWIG: OTHER WINS

# TWIG: OTHER WINS

**less code** than PHP functions



# TWIG: OTHER WINS

**less code** than PHP functions

```
function theme_image($variables) {  
    $attributes = $variables['attributes'];  
    $attributes['src'] = file_create_url($variables['uri']);  
  
    foreach (array('width', 'height', 'alt', 'title') as $key) {  
        if (isset($variables[$key])) {  
            $attributes[$key] = $variables[$key];  
        }  
    }  
  
    return '<img' . new Attribute($attributes) . ' />';  
}
```

D7

```

```

D8

theme\_image becomes image.html.twig

# TWIG

**less code** than PHP functions

D7

```
function theme_username($variables) {  
    if (isset($variables['link'])) {  
        $output = $variables['link'];  
    }  
    else {  
        $output = '<span' . new Attribute($variables['attributes']) . '>' . $variables['name'] . $variables['extra'] . '</span>';  
    }  
    return $output;  
}
```

D8

```
{% if link %}  
    <a href="{{ link.href }}" {{ link.attributes }}>{{ name }}{{ extra }}</a>  
{% else %}  
    <span{{ attributes }}>{{ name }}{{ extra }}</span>  
{% endif %}
```

theme\_username becomes username.html.twig



# TWIG

**less code** than PHP functions

```
function theme_link($variables) {  
    return '<a href="' . check_plain(url($variables['path'], $variables['options']))  
        . '"' . new Attribute($variables['options']['attributes']) . '>  
        . ($variables['options']['html'] ? $variables['text'] : check_plain($variables['text']))  
        . '</a>';  
}
```

D7

D8

```
<a href="{{ url(path, options) }}"|{{ attributes }}>{{ text }}</a>
```

theme\_link becomes link.html.twig



D7

```
function theme_item_list($variables) {
  $items = $variables['items'];
  $title = $variables['title'];
  $type = $variables['type'];
  $list_attributes = $variables['attributes'];

  $output = '';
  if ($items) {
    $output .= '<' . $type . drupal_attributes($list_attributes) . '>';

    $num_items = count($items);
    $i = 0;
    foreach ($items as $key => $item) {
      $i++;
      $attributes = array();

      if (is_array($item)) {
        $value = '';
        if (isset($item['data'])) {
          $value = $item['data'];
        }
        $attributes = array_diff_key($item, array('data' => 0, 'children' => 0));

        // Append nested child list, if any.
        if (isset($item['children'])) {
          // HTML attributes for the outer list are defined in the 'attributes'
          // theme variable, but not inherited by children. For nested lists,
          // all non-numeric keys in 'children' are used as list attributes.
          $child_list_attributes = array();
          foreach ($item['children'] as $child_key => $child_item) {
            if (is_string($child_key)) {
              $child_list_attributes[$child_key] = $child_item;
              unset($item['children'][$child_key]);
            }
          }
          $value .= theme('item_list', array(
            'items' => $item['children'],
            'type' => $type,
            'attributes' => $child_list_attributes,
          ));
        }
        else {
          $value = $item;
        }

        $attributes['class'][] = ($i % 2 ? 'odd' : 'even');
        if ($i == 1) {
          $attributes['class'][] = 'first';
        }
        if ($i == $num_items) {
          $attributes['class'][] = 'last';
        }

        $output .= '<li' . drupal_attributes($attributes) . '>' . $value . '</li>';
      }
      $output .= "</$type>";
    }

    // Only output the list container and title, if there are any list items.
    if ($output != '') {
      if ($title != '') {
        $title = '<h3>' . $title . '</h3>';
      }
      $output = '<div class="item-list">' . $title . $output . '</div>';
    }

    return $output;
  }
}
```

**lots less code** than PHP functions

D8

```
{% if items %}
<div class="item-list"> {% @todo remove this div %}
  {% if title %}
    <h3>{{ title }}</h3>
  {% endif %}
  {% if type == 'ol' %}
    <ol class="{{ attributes.class }}"{{ attributes }}>
  {% else %}
    <ul class="{{ attributes.class }}"{{ attributes }}>
  {% endif %}
  {% for item in items %}
    <li{{ item.attributes }}>{{ item.data }}</li>
  {% endfor %}
  {% if type == 'ol' %}
</ol>
  {% else %}
</ul>
  {% endif %}
</div> {% @todo remove this div %}
{% endif %}
```

theme\_item\_list becomes  
item\_list.html.twig



# TWIG: OTHER WINS

Awesome template inspection.

# TWIG: OTHER WINS

Awesome template inspection.

```
$settings['twig_debug'] = TRUE;
```

```
218 <!-- THEME DEBUG -->
219 <!-- CALL: theme('item_list__user__new') -->
220 <!-- BEGIN OUTPUT from 'core/modules/system/templates/item-list.html.twig' -->
221 <div class="item-list">
222     <ul class="item-list">
223         <li class="odd first last"><a href="/user/1" title="View user profile." class="username">
224     </ul>
225 </div>
226
227 <!-- END OUTPUT from 'core/modules/system/templates/item-list.html.twig' -->
228
```

(“devel themer” in core)



# TWIG: OTHER WINS

Awesome variable inspection.

# TWIG: OTHER WINS

Awesome variable inspection.

```
{% dump(_context) %}
```

(devel's dpm() in core)



# TWIG: OTHER WINS

Template inheritance

# TWIG: OTHER WINS

## Template inheritance

```
<section id="comments" class="{{ attributes.class }}"{{ attributes }}>
  {% if comments %}
    {% if node.type != 'forum' %}
      {{ title.prefix }}
      <h2 class="title">{{ 'Comments' | t }}</h2>
      {{ title.suffix }}
    {% endif %}
    {{ comments }}
  {% endif %}
  {% if form %}
    <h2 class="title comment-form">{{ 'Add new comment' | t }}</h2>
    {{ form }}
  {% endif %}
</section>
```

comment-wrapper.html.twig before



# TWIG: OTHER WINS

## Template inheritance

```
<section id="comments" class="{{ attributes.class }}"{{ attributes }}>
  {% if comments %}
    {% codeblock title %}
      {{ title.prefix }}
      <h2 class="title">{{ 'Comments' | t }}</h2>
      {{ title.suffix }}
    {% end codeblock %}
    {{ comments }}
  {% endif %}

  {% if form %}
    <h2 class="title comment-form">{{ 'Add new comment' | t }}</h2>
    {{ form }}
  {% endif %}
</section>
```

comment-wrapper.html.twig after

# TWIG: OTHER WINS

## Template inheritance

```
{% extends "comment-wrapper.html.twig" %}~  
  
{% codeblock title %}~  
{% end codeblock %}~
```

comment-wrapper--forum.html.twig  
(child template)



# TWIG: OTHER WINS

Possible performance gains (Much TBD)

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Rendering should get much faster when the same content element appears multiple times on the page.

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- PHPtemplate reads files from disk **on every use** (or stat()s them with APC)
- Twig templates are read once & compiled into classes

Rendering should get much faster when the same content element appears multiple times on the page.

Consolidating many similar templates will result in an additional gain.



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In-browser template editing finally safe.

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In-browser template editing finally safe.

- Saving PHP code in the database is a HUGE no-no.
- Twig is not PHP, and is safe to store!

Modules like 'Contemplate' (Content templates) will finally be safe to use.

In-browser template editing is something WordPress users have been asking of Drupal for a very long time.



# TWIG: OTHER WINS

Twig template files can be used on the front end, too.

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One template can return markup for both your PHP-generated pages, as well as pages generated vi JS in AJAX callbacks.



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One template can return markup for both your PHP-generated pages, as well as pages generated vi JS in AJAX callbacks.

We can use other open source libraries like TwigJS.  
(<https://github.com/schmittjoh/twig.js>)

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2-way communication between UI and code.



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No broken UIs.

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2-way communication between UI and code.

No broken UIs.

Template files can be created first, and the Drupal site can build itself\* based on the presence and location of variables in the templates.

\*within reason



# THE NEW THEME LAYER IN DRUPAL 8

looks pretty awesome, right?

# HELP US GET THERE

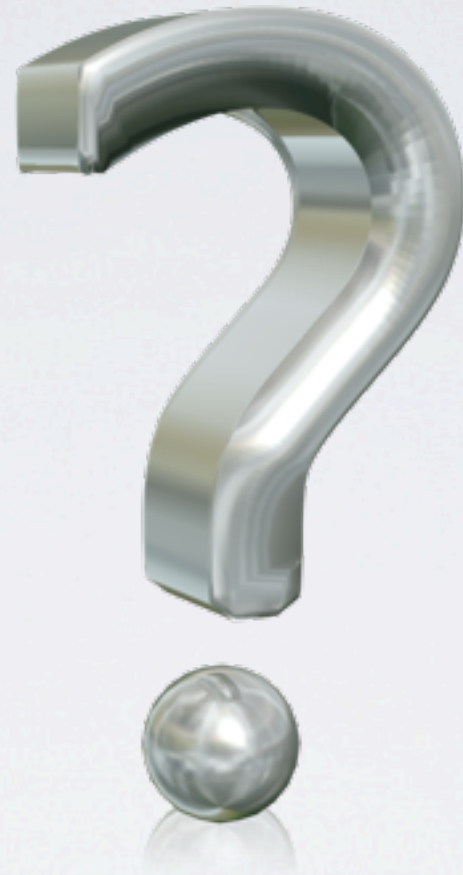
we need your help!

we could be “done” in 1.5 weeks

<http://drupal.org/node/1757550>

IRC: #drupal-twig





QUESTIONS?

# THE NEW THEME LAYER IN DRUPAL 8

Jen Lampton ~ @jenlampton  
[www.jenlampton.com](http://www.jenlampton.com)



# photo credits:

lolcat-flexible

<http://cheezburger.com/2679924736>

anything is possible pebbles

<http://www.invergordontours.com/aip.html>

lolcat questionmark

<http://icanhascheezburger.com/2007/10/31/11197/>

wheel-reinvented

<http://www.brainwads.net/drewhawkins/2012/01/dont-re-invent-the-wheel-make-something-better/>

objects

[http://2teachers1classroom.blogspot.com/2009\\_02\\_01\\_archive.html](http://2teachers1classroom.blogspot.com/2009_02_01_archive.html)

shapes

[http://englishclass.jp/reading/topic/For\\_Screening\\_Purposes\\_Only](http://englishclass.jp/reading/topic/For_Screening_Purposes_Only)

secure

<http://blog.stratopedia.org/2010/06/03/what-is-a-secure-site/>

consistency

<http://icsigns.org/press/2010/03/23/consistency-staying-on-the-mark/>

twig bird comic

<http://s302.photobucket.com/albums/nn105/walkseva/?action=view&current=thebirdneedsthattwig.gif&currenttag=bird%20park%20twig%20comic%20need%20it>

twig docs screenshots

<http://twig.sensiolabs.org/documentation>

twig speed graphs

<http://phpcomparison.net/>

python icon

<http://python-hosting.org/>

ruby icon

<http://itmediaconnect.ro/en/web>

django logo

<http://py-arahat.blogspot.com/2010/08/django-vs-pylons.html>

symfony logo

<http://symfony.com/logo>

scotch glass

<http://www.thespir.it/articles/scotch-101/?viewall=1>

speech bubble

<http://ljtflash.blogspot.com/2012/10/youre-beautiful-no-matter-what-they-say.html>