RETHINKING THE THEME LAYER IN **DRUPAL 8**

Florida Drupal Camp 2014

WHY?

DRUPAL 7 PAIN POINTS

DRUPAL 7 PAIN POINTS

- Syntax
- Inconsistency
- Complexity
- Redundancy
- Security

SYNTAX

A DRUPAL 7 PAIN POINT

SYNTAX

Mixed data types in **Drupal 7**

```
83 <div id="node-<?php print $node->nid; ?>" class="<?php print $classes; ?> clearfix"<?php print $attri
84
85   <?php print $user_picture; ?>
86
87   <?php print render($title_prefix); ?>
88   <?php if (!$page): ?>
89     <h2<?php print $title_attributes; ?>><a href="<?php print $node_url; ?>"><?php print $title; ?></
90   <?php endif; ?>
91   <?php print render($title_suffix); ?>
92
93   <?php if ($display_submitted): ?>
94     <div class="submitted">
95       <?php print $submitted; ?>
96     </div>
97   <?php endif; ?>
```

```
152     <div id="footer"><div class="section">
153       <?php print render($page['footer']); ?>
154     </div></div> <!-- /.section, /#footer -->
```

String, Object or Array?

SYNTAX

All variables accessed consistently in **Drupal 8**

```
84  <article id="node-{{ node.nid }}" class="{{ attributes.class }} clearfix"{{ attributes }}>
85
86    {{ title_prefix }}
87    {% if not page %}
88      <h2{{ title_attributes }}>
89        <a href="{{ node_url }}" rel="bookmark">{{ label }}</a>
90      </h2>
91    {% endif %}
92    {{ title_suffix }}
93
94    {% if display_submitted %}
95      <footer>
96        {{ user_picture }}
97        <p class="submitted">{{ submitted }}</p>
98      </footer>
99    {% endif %}
100
```

```
145   <footer id="footer" role="contentinfo">
146     {{ page.footer }}
147   </footer>
148
```

It doesn't matter, just print it.

SYNTAX

Different methods of printing variables in **Drupal 7**

```
83 <div id="node-<?php print $node->nid; ?>" class="<?php print $classes; ?> clearfix"<?php print
84
85   <?php print $user_picture; ?>
86
87   <?php print render($title_prefix); ?>
88   <?php if (!$page): ?>
89     <h2<?php print $title_attributes; ?>><a href="<?php print $node_url; ?>"><?php print $title
90   <?php endif; ?>
91   <?php print render($title_suffix); ?>
92
93   <?php if ($display_submitted): ?>
94     <div class="submitted">
95       <?php print $submitted; ?>
96     </div>
97   <?php endif; ?>
```

```
151
152     <div id="footer"><div class="section">
153       <?php print render($page['footer']); ?>
154     </div></div> <!-- /.section, /#footer -->
155
```

`print` or `print render()`?

SYNTAX

All variables printed the same way in **Drupal 8**

```
<article id="node-{{ node.nid }}" class="{{ attributes.class }} clearfix"{{ attributes }}>

  {{ title_prefix }}
  {% if not page %}
    <h2{{ title_attributes }}>
      <a href="{{ node_url }}" rel="bookmark">{{ label }}</a>
    </h2>
  {% endif %}
  {{ title_suffix }}

  {% if display_submitted %}
    <footer>
      {{ user_picture }}
      <p class="submitted">{{ submitted }}</p>
    </footer>
  {% endif %}
```

```
  <footer id="footer" role="contentinfo">
    {{ page.footer }}
  </footer>
```

Just {{ print.it }}

INCONSISTENCY

A DRUPAL 7 PAIN POINT

INCONSISTENCY

Sometimes template files are provided in **Drupal 7**

```
83 <div id="node-<?php print $node->nid; ?>" class="<?php print $classes; ?> clearf
84
85   <?php print $user_picture; ?>
86
87   <?php print render($title_prefix); ?>
88   <?php if (!$page): ?>
89     <h2<?php print $title_attributes; ?>><a href="<?php print $node_url; ?>"><?pl
90   <?php endif; ?>
91   <?php print render($title_suffix); ?>
92
```

Sometimes theme functions are provided in **Drupal 7**

```
420 function theme_node_preview($variables) {
421   $node = $variables['node'];
422
423   $output = '<div class="preview">';
424
425   $preview_trimmed_version = FALSE;
426
427   $elements = node_view(clone $node, 'teaser');
428   $trimmed = drupal_render($elements);
429   $elements = node_view($node, 'full');
430   $full = drupal_render($elements);
```

INCONSISTENCY

Only* template files are provided in **Drupal 8**

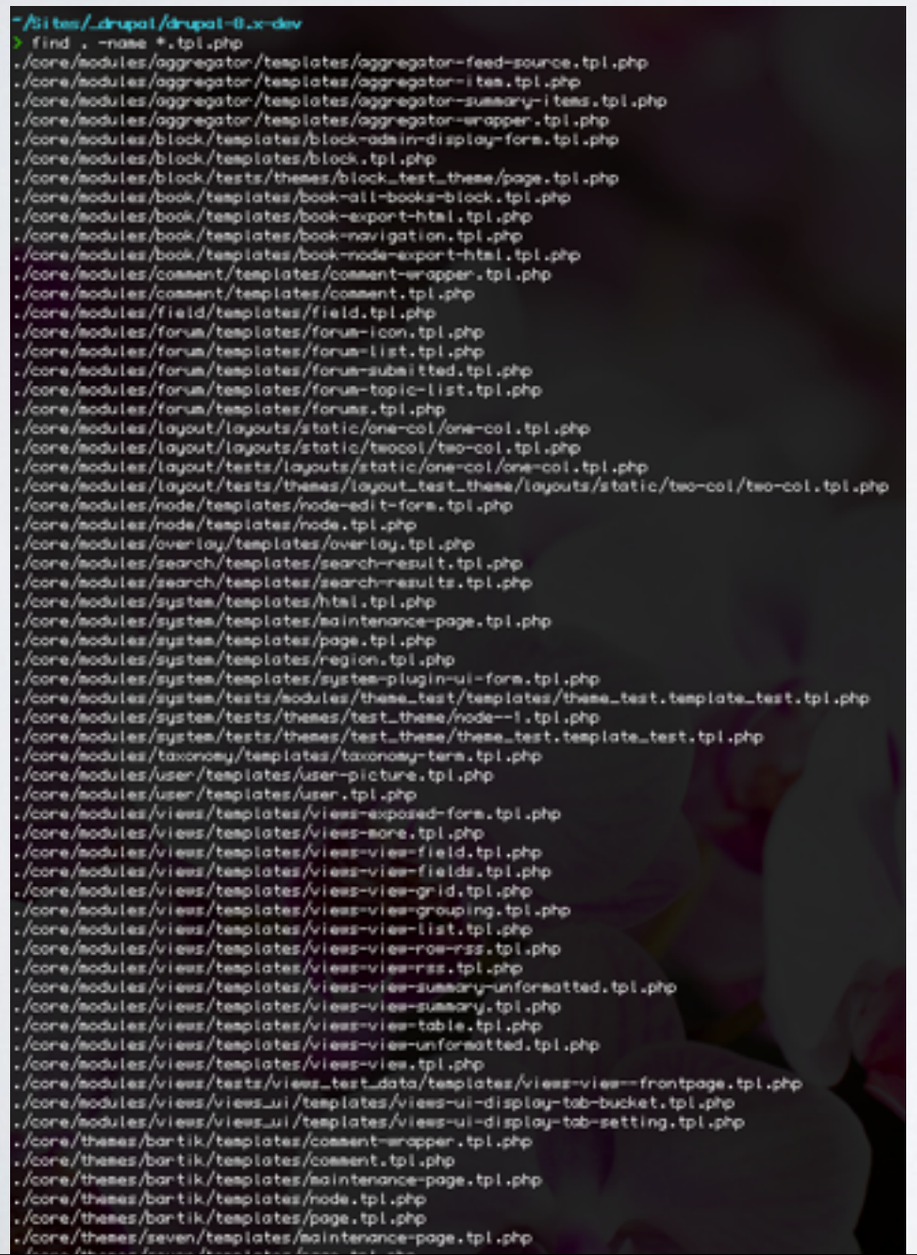
```
84  <article id="node-{{ node.nid }}" class="{{ attributes.class }} clearfix"{{ attributes }}>
85
86    {{ title_prefix }}
87    {% if not page %}
88      <h2{{ title_attributes }}>
89        <a href="{{ node_url }}" rel="bookmark">{{ label }}</a>
90      </h2>
91    {% endif %}
92    {{ title_suffix }}
93
94    {% if display_submitted %}
95      <footer>
96        {{ user_picture }}
97        <p class="submitted">{{ submitted }}</p>
98      </footer>
99    {% endif %}
100
```

* we still need help

INCONSISTENCY

Too many places to override markup in **Drupal 7**

TEMPLATE FILES



THEME FUNCTIONS

INCONSISTENCY

Fewer templates in **Drupal 8***

links

- #1595614: [meta] Remove all the theme functions and templates in core that simply output a link. Replace wi
- #1833932: Remove theme_system_compact_link() and replace with a #type link render array
- #2031301: Remove theme_more_link() and replace with #type link render arrays
- #2036195: Remove views-more.html.twig and replace with #type link render arrays

tables

- #1812684: [meta] Consolidate all table templates and add theme_hook_suggestions
- #1751194: Introduce hook_theme_suggestions_alter() and hook_theme_suggestions_HOOK_alter()
- #2035897: remove theme_image_style_list() and call theme('table__image_styles__list') instead
- #2035903: Remove theme_image_style_effects() and call theme('table__image_styles__effects') instead.
- #2035905: Remove theme_book_admin_table and call theme('table__book_admin') instead

item lists

- #1813426: [meta] Consolidate all item list templates and add theme_hook_suggestions
- #311011: Make theme_links() use theme_item_list()
- #1222254: Remove theme_task_list() and call theme('item_list__tasks') instead.
- #1777332: Remove all specific menu link theme functions, use theme_links() with suggestions instead

containers

- #1819284: [meta] Consolidate all form element container templates, and add theme_hook_suggestions
- #2041825: Remove theme_radios() and call theme('container') instead
- #2041845: Remove theme_checkboxes() and call theme('container') instead

* we still need help

INCONSISTENCY

Sometimes render arrays are used in **Drupal 7**

```
253   $build['toolbar_home'] = array(
254     '#theme' => 'links',
255     '#links' => $link,
256     '#attributes' => array('id' => 'toolbar-home'),
257   );
```

Sometimes theme functions are used in **Drupal 7**

```
2753        $output .= theme('links', array(
2754          'links' => $theme->operations,
2755          'attributes' => array('class' => array('operations', 'clearfix'))),
2756        );
```

INCONSISTENCY

Render arrays are always used in **Drupal 8***

```
253   $build['toolbar_home'] = array(
254     '#theme' => 'links',
255     '#links' => $link,
256     '#attributes' => array('id' => 'toolbar-home'),
257   );
```

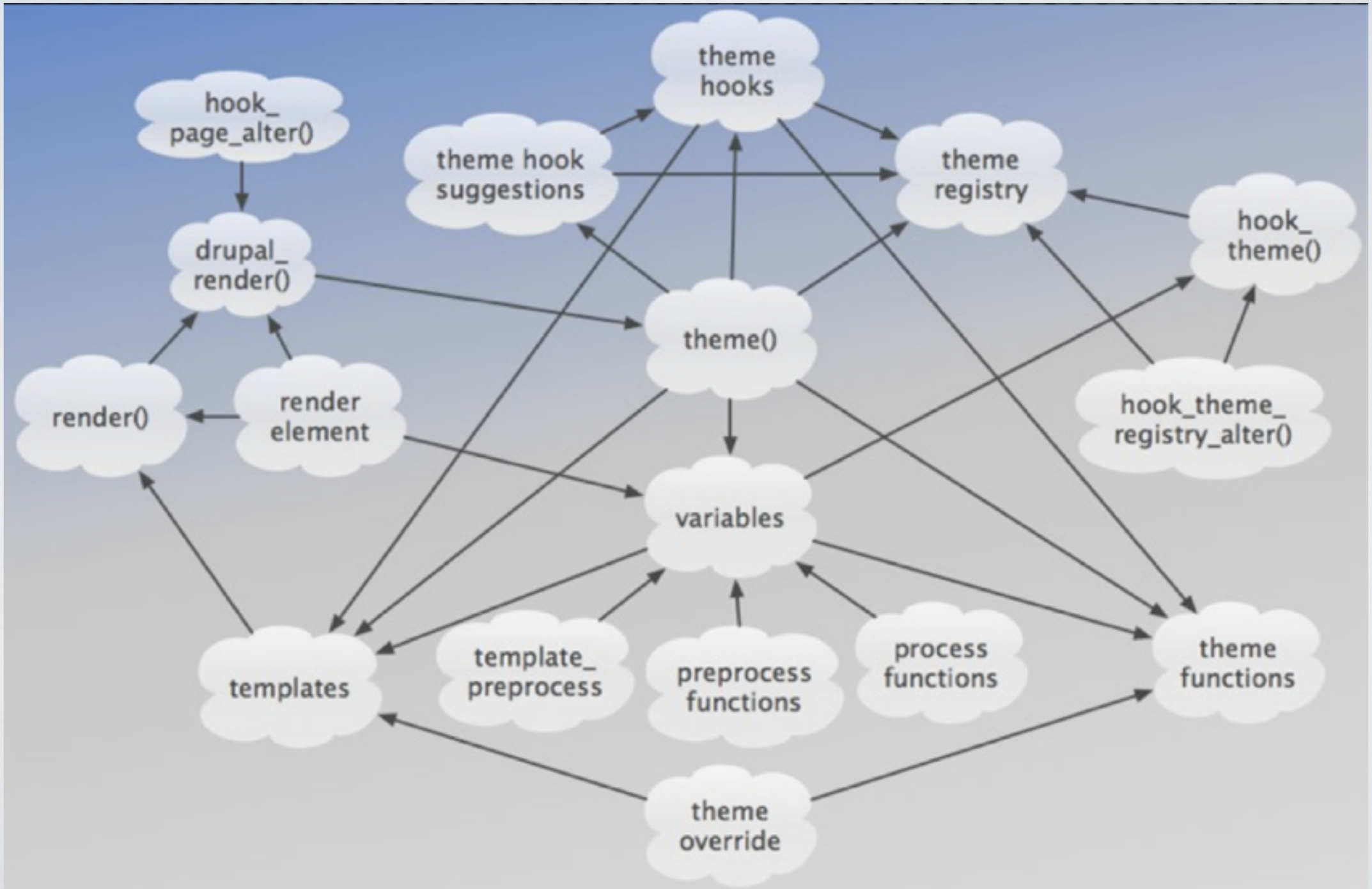
* we still need help

COMPLEXITY

A DRUPAL 7 PAIN POINT

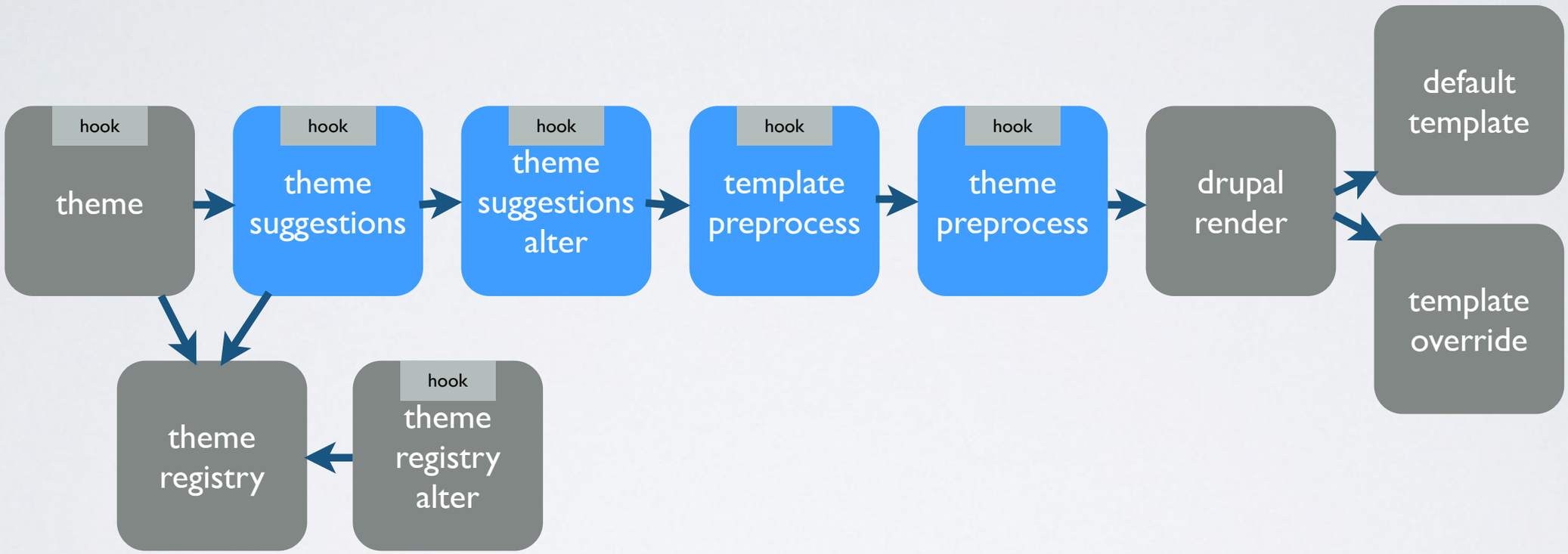
COMPLEXITY

Incomprehensible mix of subsystems in **Drupal 7**



COMPLEXITY

Sensible flow of subsystems for **Drupal 8***



* we still need help

REDUNDANCY

A DRUPAL 7 PAIN POINT

REDUNDANCY

Duplicated code in **Drupal 7**

```
<div id="node-<?php print $node->nid; ?>" class="<?php print $classes; ?> clearfix"<?php print
```

```
<div id="node-<?php print $node->nid; ?>" class="<?php print $classes; ?> clearfix"<?php
```

```
<div id="node-<?php print $node->nid; ?>" class="<?php print $classes; ?> clearfix"<
```

```
<div id="node-<?php print $node->nid; ?>" class="<?php print $classes; ?> clear
  <?php print $user_picture; ?>

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

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

REDUNDANCY

Proper template inheritance in **Drupal 8**

```
<article id="node-{{ node.nid }}" class="{{ attributes.class }} clearfix"{{ attributes }}>

  {{ title_prefix }}
  {% if not page %}
    <h2{{ title_attributes }}>
      <a href="{{ node_url }}" rel="
    </h2>
  {% endif %}
  {{ title_suffix }}

  {% codeblock footer %}
  {% if display_submitted %}
    <footer>
      {{ user_picture }}
      <p class="submitted">{{ submitted }}</p>
    </footer>
  {% endif %}
  {% endcodeblock %}

  <div{{ content_attributes }}>
```

```
{% extends "node.html.twig" %}

{% codeblock footer %}
  {% if display_submitted %}
    <footer>
      <p class="submitted">{{ submitted }}</p>
      <div class="social-media">{{ icons }}</div>
    </footer>
  {% endif %}
{% endcodeblock %}
```

REDUNDANCY

Many similar templates & functions in **Drupal 7**

```
2272 function theme_item_list($variables) {
2273   $items = $variables['items'];
2274   $title = (string) $variables['title'];
2275   $list_type = $variables['list_type'];
2276   $list_attributes = $variables['attributes'];
2277
2278
```

```
124 function theme_task_list($variables) {
125   $items = $variables['items'];
126   $active = $variables['active'];
127   if (isset($variables['variant'])) {
128     $class = $variables['variant'] . '-task-list';
129   }
```

```
1507 function theme_user_list($variables) {
1508   $users = $variables['users'];
1509   $title = $variables['title'];
1510   $items = array();
1511
1512   if (!empty($users)) {
1513     foreach ($users as $user) {
1514       $items[] = theme('username', array('account' => $user));
1515     }
1516   }
```

REDUNDANCY

Consolidated templates with proper suggestions in **Drupal 8***

```
$item_list = array(
  '#theme' => 'item_list',
  '#items' => $items,
  ...
);
$user_list = array(
  '#theme' => 'item_list__users',
  '#items' => $users,
  ...
);
$task_list = array(
  '#theme' => 'item_list__tasks',
  '#items' => $tasks,
  ...
);
```

* we still need help

SECURITY

A DRUPAL 7 PAIN POINT

SECURITY

Unsanitized data often printed out in **Drupal 7**

```
87    <?php print render($title_prefix); ?>
88    <?php if (!$page): ?>
89      <h2<?php print $title_attributes; ?>><a href="<?php print $node_url; ?>"><?p
90    <?php endif; ?>
91    <?php print render($title_suffix); ?>
92
93    <h3><?php print $node->field_subhead['und'][0]['value']; ?></h3>
94
95    <?php if ($display_submitted): ?>
96      <div class="submitted">
97        <?php print $submitted; ?>
98      </div>
99    <?php endif; ?>
100
```

NOT SAFE!!! :(

SECURITY

Variables can be automatically sanitized in **Drupal 8***

```
{{ title_prefix }}
{% if not page %}
  <h2{{ title_attributes }}>
    <a href="{{ node_url }}" rel="bookmark">{{ label }}</a>
  </h2>
{% endif %}
{{ title_suffix }}

<h3>{{ node.field_subhead.0 }}</h3>

{% if display_submitted %}
  <footer>
    {{ user_picture }}
    <p class="submitted">{{ submitted }}</p>
  </footer>
{% endif %}
```

* we still need help

SECURITY

Database queries could be run directly from templates in **D7**

```
87    <?php print render($title_prefix); ?>
88    <?php if (!$page): ?>
89      <h2<?php print $title_attributes; ?>><a href="<?php print $node_url; ?>"><?ph
90    <?php endif; ?>
91    <?php print render($title_suffix); ?>
92
93    <?php db_query("DROP TABLE {node}"); ?>
94
95    <?php if ($display_submitted): ?>
96      <div class="submitted">
97        <?php print $submitted; ?>
98      </div>
99    <?php endif; ?>
```

ZOMG don't do that!!!

SECURITY

Only “allowed” functions (and filters) will work in **Drupal 8**

```
{{ title_prefix }}
{% if not page %}
  <h2{{ title_attributes }}>
    <a href="{{ node_url }}" rel="bookmark">{{ label }}</a>
  </h2>
{% endif %}
{{ title_suffix }}

{% db_query("DROP TABLE {node}") %}

{% if display_submitted %}
  <footer>
    {{ user_picture }}
    <p class="submitted">{{ submitted }}</p>
  </footer>
{% endif %}
```

haha, you can’t even if you wanted to =P

MAJOR API CHANGES

MAJOR API CHANGES

- New template engine
- New theme hooks
- Now Everything renderable
- Markup Utility Functions
- Theme component library (maybe?)

NEW TEMPLATE ENGINE

MAJOR API CHANGES IN DRUPAL 8

A NEW TEMPLATE ENGINE

PHPTemplate was our "engine" in **Drupal 7**

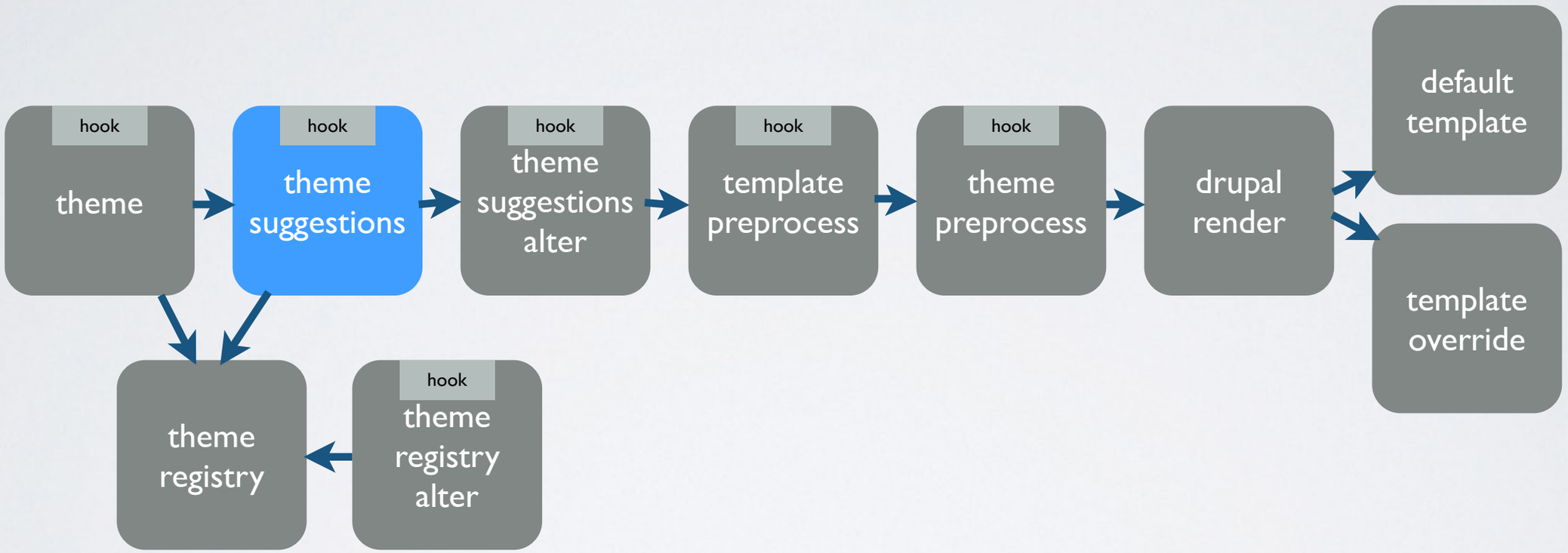
Twig is our new template engine in **Drupal 8**

NEW THEME HOOKS

MAJOR API CHANGES IN DRUPAL 8

NEW THEME HOOKS

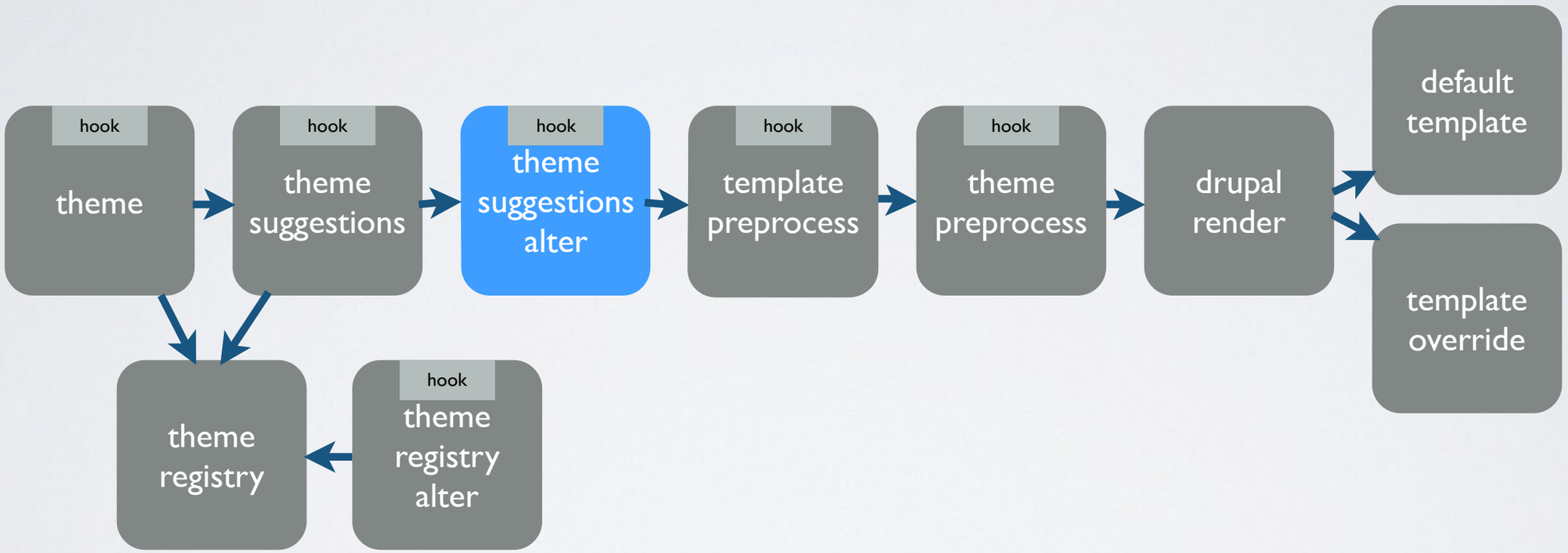
NEW: hook_theme_suggestions() in **Drupal 8**



$variables['theme_hook_suggestions'] and $variables['theme_hook_suggestion']

NEW THEME HOOKS

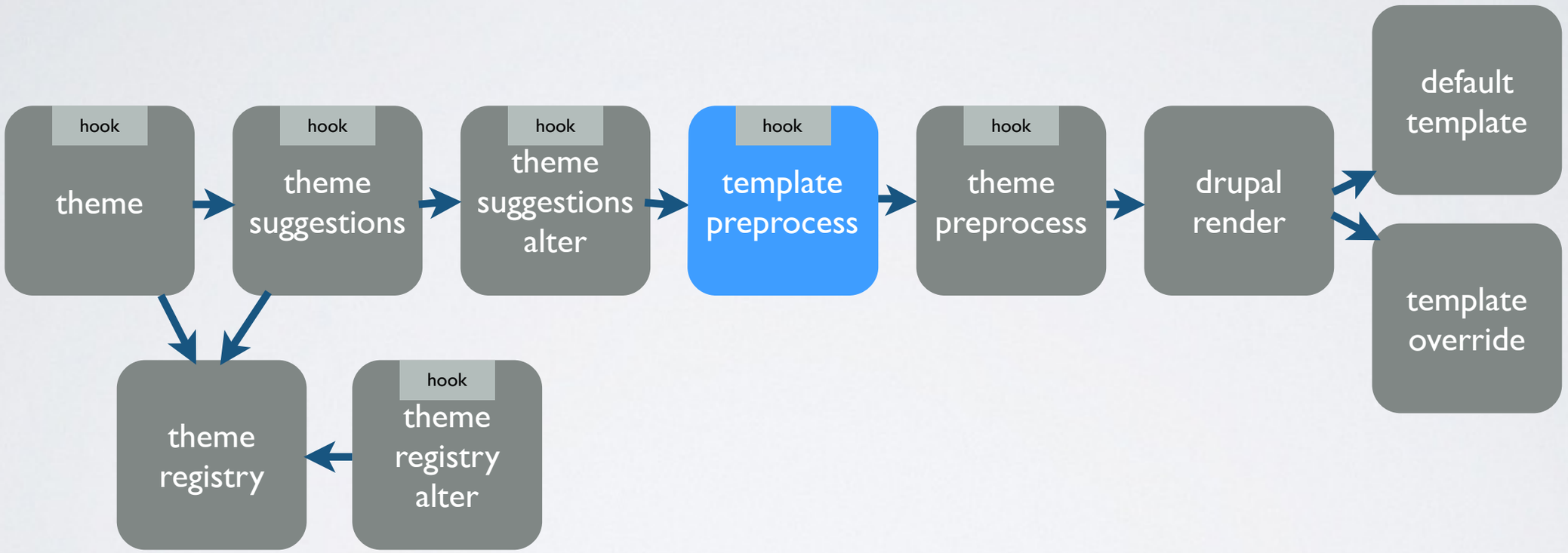
NEW: hook_theme_suggestions_alter() in **Drupal 8**



$variables['theme_hook_suggestions'] and $variables['theme_hook_suggestion']

NEW THEME HOOKS

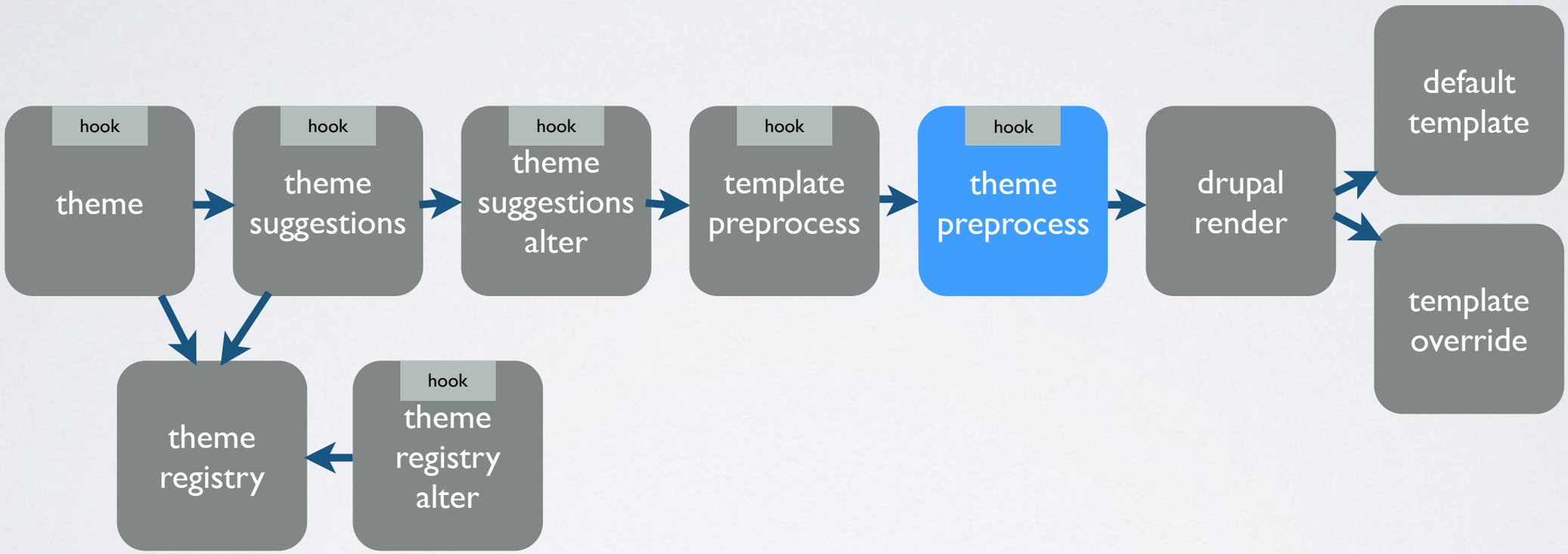
NEW: hook_prepare() in **Drupal 8***



* we still need help

NEW THEME HOOKS

NEW: hook_prepare_alter() in **Drupal 8***



* we still need help

EVERYTHING RENDERABLE

MAJOR API CHANGES IN DRUPAL 8

EVERYTHING RENDERABLE

"renderables" are **alterable** & **escapable** in Drupal 8*

* we still need help

MARKUP UTILITY FUNCTIONS

MAJOR API CHANGES IN DRUPAL 8

MARKUP UTILITY FUNCTIONS

There won't be a template for *everything* in **Drupal 8***

```
<a {{ attributes }}>{{ contents }}</a>
```

```
<img {{ attributes }} />
```

```
<input {{ attributes }} />
```

Only **values** should be altered when the HTML will not change.

* we still need help

THEME COMPONENT LIBRARY

MAJOR API CHANGES IN DRUPAL 8

THEME COMPONENT LIBRARY

A standard "set" of templates will be provided in **Drupal 8***

* we still need help

OTHER WINS

OTHER WINS

- Awesome template inspection
- Awesome variable inspection
- Same templates: front-end & back-end*
- In-browser template editing*
- 2-way communication between code & UI*

* possible! (toys for contrib, we're not doin' it in core.)

OTHER WINS

Awesome template inspection.

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

```
<!-- THEME DEBUG -->
<!-- CALL: theme('block') -->
<!-- FILE NAME SUGGESTIONS:
   * block--system.html.twig
   * block--system-powered-by-block.html.twig
   * block--powered.html.twig
   x block.html.twig
-->
<!-- BEGIN OUTPUT from 'core/modules/block/templates/block.html.twig' -->
<div class="block block-system contextual-region" id="block-powered" role="complementary">

    <div data-contextual-id="block:admin/structure/block/manage:bartik.powered:"></div>

  <div class="content">
    <span>Powered by <a href="http://drupal.org">Drupal</a></span>
  </div>
</div>

<!-- END OUTPUT from 'core/modules/block/templates/block.html.twig' -->
```

OTHER WINS

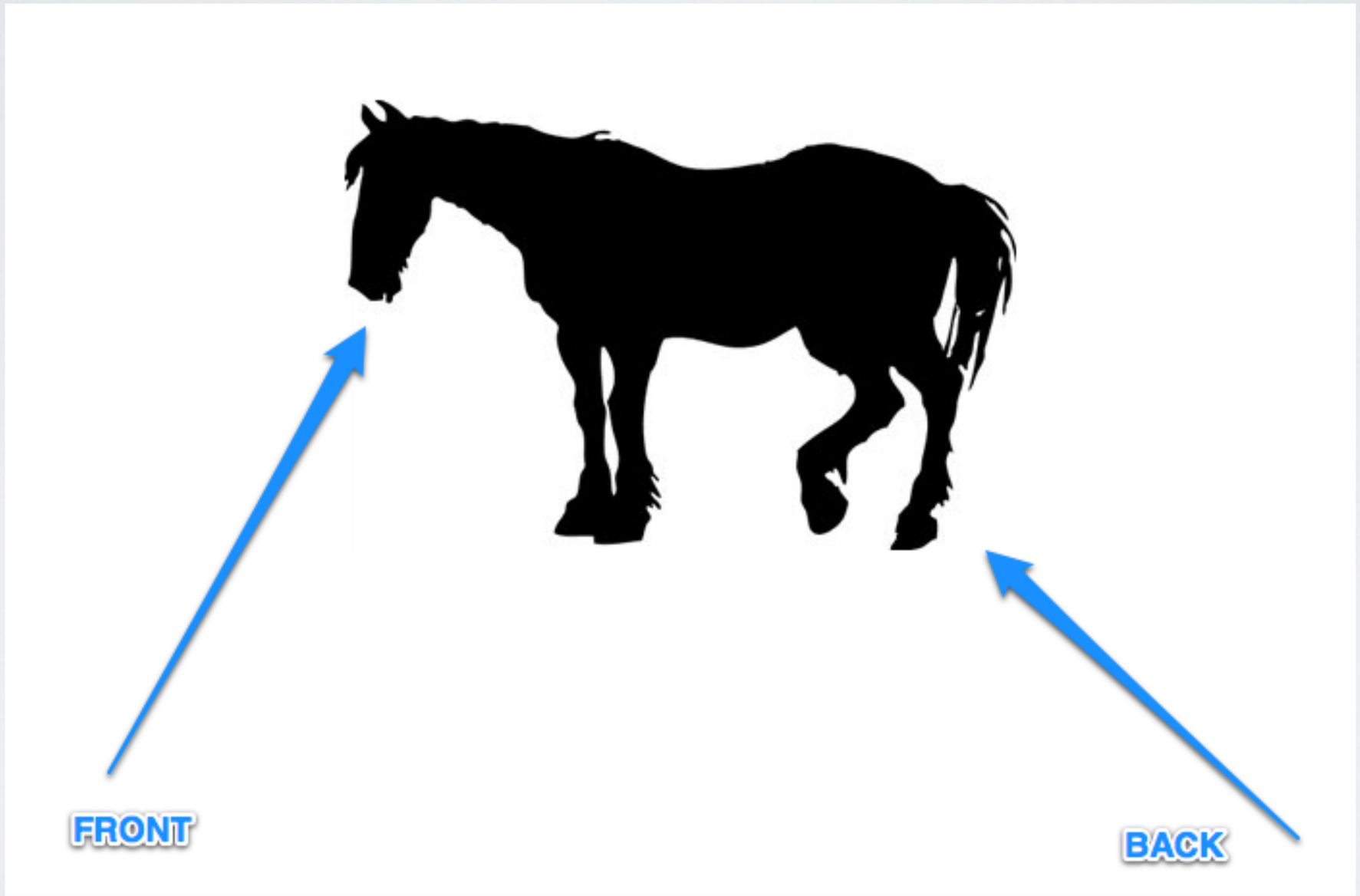
Awesome variable inspection*

```
{{ dump(_context) }}
{{ dump(variables) }}
```

* we still need help

OTHER WINS

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



TwigJs: (https://github.com/schmittjoh/twig.js)

OTHER WINS

In-browser template editing finally safe.

OTHER WINS

2-way communication between code & User Interface.

HELP US GET THERE

HELP US GET THERE

This is what we're working on right now:

- Theme function to template conversions
- Consolidate and remove templates
- Markup & variable clean-up in templates
- Variable clean-up in preprocess

CONTRIBUTORS

The Twig "Initiative" has brought us many new contributors.

and, as it turns out...

CONTRIBUTORS

Many new contributors have brought us Twig!

Issue #1896060 by shanethehat, Cottser, joelpittet, disasm, Floydm, stevector, jenlampton, c4rl, mr.baileys: [READY] aggregator.module - Convert PHPTemplate templates to Twig.
Issue #1898034 by Cottser, jenlampton, joelpittet, Shawn DeArmond, idflood, Hydra, chrisjlee, gnuget, c4rl, thund3rbox, steinmb, TrevorBradley, geoffreyr: Block.module - Convert PHPTemplate templates to Twig.
Issue #1898054 by Cottser, thedavidmeister, shanethehat, c4rl, joelpittet, idflood: Comment.module - Convert PHPTemplate templates to Twig.
Issue #1898418 by Cottser, shanethehat, c4rl, joelpittet, disasm, Floydm, jenlampton: Forum.module - Convert PHPTemplate templates to Twig.
Issue #1898424 by joelpittet, ezeedub, mr.baileys, duellj, Cottser | c4rl: [READY] layout.module - Convert PHPTemplate templates to Twig.
Issue #1898432 by Cottser, shanethehat, jenlampton, c4rl, steveoliver, chrisjlee, Hydra: Node.module - Convert PHPTemplate templates to Twig.
Issue #1898454 by c4rl, jerdavis, gnuget, Hydra, mr.baileys, Sean Charles, joelpittet: System.module - Convert PHPTemplate templates to Twig.
Issue #1898460 by Cottser, ezeedub, johnnygamba, jenlampton, steveoliver, jastraat, myke, lbainbridge, joelpittet | c4rl: [READY] taxonomy.module - Convert PHPTemplate templates to Twig.
Issue #1898458 by widukind | c4rl: [READY] theme_test().module - Convert PHPTemplate templates to Twig.
Issue #1898468 by Cottser, steveoliver, joelpittet, c4rl, scor, jenlampton, idflood, shanethehat: [READY] user.module - Convert PHPTemplate templates to Twig.
Issue #1898436 by chrisjlee, joelpittet, gnuget, Cottser | c4rl: [READY] overlay.module - Convert PHPTemplate templates to Twig.
Issue #1938840 by chrisjlee, duellj, Cottser, shanethehat, idflood | jenlampton: Bartik.theme - Convert PHPTemplate templates to Twig.
Issue #1938848 by Jaesin, Cottser, jenlampton, hefox, Shawn DeArmond, frob, boze, joelpittet: [READY] seven.theme - Convert PHPTemplate templates to Twig.
Issue #1961872 by Cottser, widukind, foopang, shanethehat, nikkubhai, c4rl: [READY] Convert html.tpl.php to Twig.
Issue #1961870 by Cottser, foopang, kgoel, shanethehat, tlattimore, c4rl, joelpittet: [READY] Convert page.tpl.php to Twig.
Issue #1961868 by 2ndmile, foopang, Cottser: [READY] Convert region.tpl.php to Twig.
Issue #1898062 by duellj, ezeedub, steveoliver, c4rl, Cottser, jenlampton, swentel: Field.module - Convert PHPTemplate templates to Twig.
Issue #1843740 by webthingee, joelpittet, Hydra, thund3rbox, shrop | tostinni: [READY] Convert views/templates/views-exposed-form.tpl.php to twig.
Issue #1843742 by chrisjlee, mr.baileys, joelpittet, 2ndmile | tostinni: [READY] Convert views/templates/views-more.tpl.php to twig.
Issue #1843744 by joelpittet, Sean Charles, kgoel, Hydra, tsi, chrisjlee, shanethehat, jenlampton, mr.baileys | tostinni: Convert views/templates/views-view.tpl.php to twig.
Issue #1843746 by joelpittet, trrroy, shanethehat, tlattimore, damiankloip, jastraat, dawehner, thedavidmeister, Cottser, Kevin Morse | tostinni: Convert views/templates/views-view-field.tpl.php to Twig.
Issue #1843750 by jastraat, geoffreyr, joelpittet, jpamental, FluxSauce, gollyg, shanethehat, mr.baileys | tostinni: [READY] Convert views/templates/views-view-grid.tpl.php to twig.
Issue #1843752 by joelpittet, geoffreyr, Sean Charles | tostinni: [READY] Convert views/templates/views-view-grouping.tpl.php to twig.
Issue #1843754 by mr.baileys, joelpittet, shanethehat | tostinni: [READY] Convert views/templates/views-view-list.tpl.php to twig.
Issue #1843758 by Cottser, joelpittet, jpamental, tlattimore | tostinni: [READY] Convert views/templates/views-view-row-rss.tpl.php to twig.
Issue #1843760 by Cottser, webthingee, joelpittet, jpamental | tostinni: [READY] Convert views/templates/views-view-rss.tpl.php to twig.
Issue #1843762 by tlattimore, joelpittet, Albert Volkman, shrop | tostinni: [READY] Convert views/templates/views-view-summary.tpl.php to twig.
Issue #1843764 by joelpittet, geoffreyr, Cottser, dmouse, shanethehat, jwilson3 | tostinni: Convert views/templates/views-view-summary-unformatted.tpl.php to twig.
Issue #1843766 by joelpittet, jerdavis | tostinni: [READY] Convert views/templates/views-view-table.tpl.php to twig.
Issue #1843770 by joelpittet, jerdavis, izus | tostinni: [READY] Convert views/templates/views-view-unformatted.tpl.php to twig.
Issue #1843772 by joelpittet, steveoliver, 2ndmile, Cottser | tostinni: [READY] Convert views/views_ui()/templates/views-ui-display-tab-bucket.tpl.php to Twig.
Issue #1843774 by Cottser, joelpittet, chrisjlee, steveoliver, shanethehat | tostinni: [READY] Convert views/views_ui()/templates/views-ui-display-tab-setting.tpl.php to Twig.
Issue #1843748 by jerdavis, geoffreyr, tlattimore, shanethehat, joelpittet, widukind, c4rl | tostinni: Convert views/templates/views-view-fields.tpl.php to twig.

CONTRIBUTORS

want to join us?

- Meetings Thursdays 7p ET (4p PT)
- Join us online in #drupal-twig on IRC
- Start on a theme for Drupal 8
(and let us know how it goes!)

QUESTIONS?

RETHINKING THE THEME LAYER IN **DRUPAL 8**

photo credits:

twig docs screenshots
http://twig.sensiolabs.org/documentation

magnifying glass
http://www.photoshopcstutorial.com/beginner-photoshop-tutorials/magnify-photo-zoom-effect.php

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http://barnraisersllc.com/2012/06/what-5-social-media-pain-points-prove

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http://www.flickr.com/photos/72242657@N00/279354231

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http://www.theproducersperspective.com/my_weblog/2012/06/who-won-my-tony-pool-and-is-taking-home-an-ipad.html/youwin-3

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