

TWIG & THE NEW THEME LAYER IN DRUPAL 8



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BUT, WHY?

DRUPAL 7 PAIN POINTS



TOP 7 PAIN POINTS IN D7

does Twig help?

1. Syntax
2. Inconsistency
3. Complexity
4. Redundancy
5. Insecurity

SYNTAX

A DRUPAL 7 PAIN POINT

SYNTAX

Mixed data types in **Drupal 7**

```
?>
<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?

SYNTAX

All variables accessed consistently in **Drupal 8**

```
83 #}
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**

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

print or print render()?

SYNTAX

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

```
83 #}
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 (still) doesn't matter, just `{{ print.it }}`

INCONSISTENCY

A DRUPAL 7 PAIN POINT

INCONSISTENCY

Two ways to override markup in **Drupal 7**

TEMPLATE FILES

```
<?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>-
```

THEME FUNCTIONS

```
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?

INCONSISTENCY

Only one way to override markup in **Drupal 8***

TEMPLATE FILES

```
98  
99 <div class="content clearfix"{{ content_attributes }}>  
100   {# We hide the comments and links now so that we can render them later. #}  
101   {% hide(content.comments) %}  
102   {% hide(content.links) %}  
103   {{ content }}  
104 </div>  
105  
106   {% if content.links %}  
107     <footer class="link-wrapper">  
108       {{ content.links }}  
109     </footer>  
110   {% endif %}  
111  
112   {{ content.comments }}  
113  
114 </article>  
115
```

* we still need help converting

INCONSISTENCY

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

```
252 |  
253 | $build['toolbar_home'] = array(  
254 |   '#theme' => 'links',  
255 |   '#links' => $link,  
256 |   '#attributes' => array('id' => 'toolbar-home'),  
257 | );  
258 |
```

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

```
2752 |  
2753 | $output .= theme('links', array(  
2754 |   'links' => $theme->operations,  
2755 |   'attributes' => array('class' => array('operations', 'clearfix'))),  
2756 | );  
2757 |
```

INCONSISTENCY

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

```
252 |  
253 | $build['toolbar_home'] = array(  
254 |   '#theme' => 'links',  
255 |   '#links' => $link,  
256 |   '#attributes' => array('id' => 'toolbar-home'),  
257 | );  
258 |
```

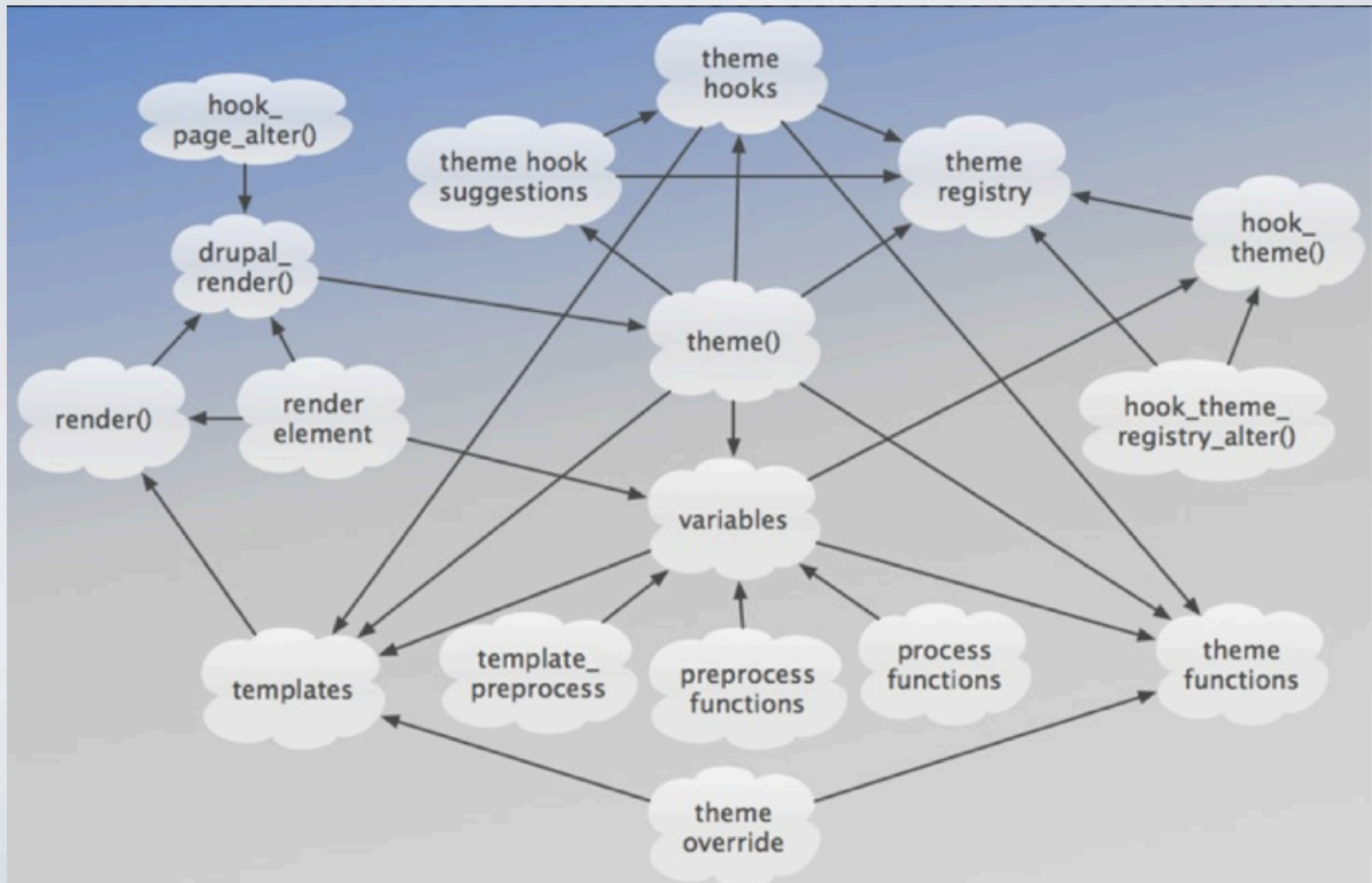
No more calls to `theme()` in **Drupal 8**

COMPLEXITY

A DRUPAL 7 PAIN POINT

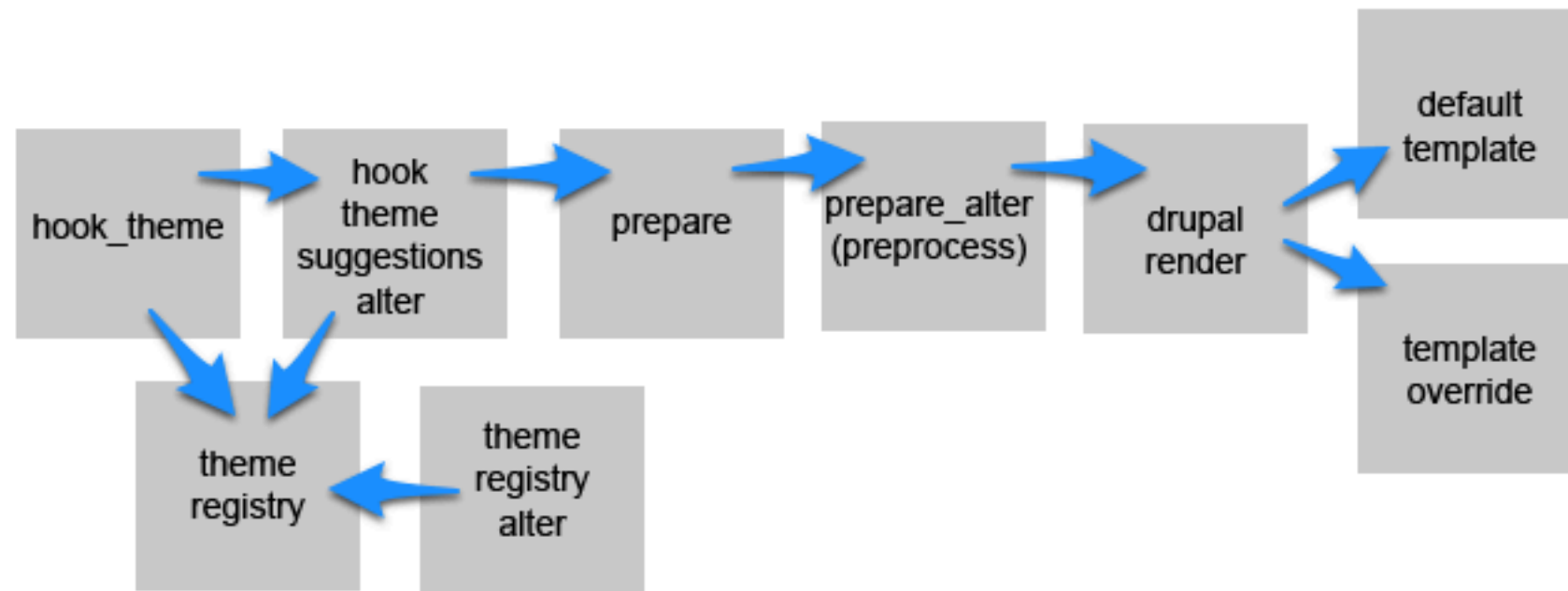
COMPLEXITY

Incomprehensible mix of subsystems for **Drupal 7**



COMPLEXITY

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



* we still need help implementing

REDUNDANCY

A DRUPAL 7 PAIN POINT

REDUNDANCY

Customizing markup meant duplicating code in **Drupal 7**

```
83 <div id="node-<?php print $node->nid; ?>" class="<?php print $classes; ?> clearfix"<?php print
84
85 83 <div id="node-<?php print $node->nid; ?>" class="<?php print $classes; ?> clearfix"<?php
86 84
87 85 83 <div id="node-<?php print $node->nid; ?>" class="<?php print $classes; ?> clearfix"<
88 86 84
89 87 85 <div id="node-<?php print $node->nid; ?>" class="<?php print $classes; ?> clear
90 88 86
91 89 87 <?php print $user_picture; ?>
92 90 88
93 91 89 <?php print render($title_prefix); ?>
94 92 90 <?php if (!$page): ?>
95 93 91 <h2<?php print $title_attributes; ?>><a href="<?php print $node_url; ?>"><?
96 94 92 <?php endif; ?>
97 95 93 <?php print render($title_suffix); ?>
98 96 94
99 97 95 <?php if ($display_submitted): ?>
100 98 96 <div class="submitted">
101 99 97 <?php print $submitted; ?>
102 100 98 </div>
103 101 99 <?php endif; ?>
```


REDUNDANCY

Proper template inheritance means less duplication 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">{{ title }}</a>
90   </h2>
91 {% endif %}
92 {{ title_suffix }}
93
94 {% codeblock footer %}
95 {% if display_submitted %}
96   <footer>
97     {{ user_picture }}
98     <p class="submitted">{{ submitted }}</p>
99   </footer>
100 {% endif %}
101 {% endcodeblock %}
102
103 <div{{ content_attributes }}>
```

```
80 {% extends "node.html.twig" %}
81
82 {% codeblock footer %}
83   {% if display_submitted %}
84     <footer>
85       <p class="submitted">{{ submitted }}</p>
86       <div class="social-media">{{ icons }}</div>
87     </footer>
88   {% endif %}
89 {% endcodeblock %}
```


REDUNDANCY

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

```
2069 function theme_item_list($variables) {  
2070     $items = $variables['items'];  
2071     $title = $variables['title'];  
2072     $type = $variables['type'];  
2073     $attributes = $variables['attributes'];  
2074       
2075     104 function theme_task_list($variables) {  
2076         105     $items = $variables['items'];  
2077         106     $active = $variables['active'];  
2078     107       
2079     108     1507 function theme_user_list($variables) {  
2080         109         1508     $users = $variables['users'];  
2081     110     1509     $title = $variables['title'];  
2082     111     1510     $items = array();  
2083     112     1511       
2084     113     1512     if (!empty($users)) {  
2085         114         1513         foreach ($users as $user) {  
2086             115             1514             $items[] = theme('username', array('account' => $user));  
2087         116             1515         }  
2088         117     1516     }  
2089     118     }
```

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 implementing

INSECURITY

A DRUPAL 7 PAIN POINT

INSECURE

Unsanitized data could be printed out in **Drupal 7**

```
<?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

NOT SAFE!!! :(

INSECURE

Variables can be automatically sanitized 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 <h3>{{ content.field_subhead| }}</h3>
95
96 {% if display_submitted %}
97   <footer>
98     {{ user_picture }}
99     <p class="submitted">{{ submitted }}</p>
100   </footer>
101 {% endif %}
```

* we still need help implementing

INSECURE

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

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

ZOMG don't do that!!!

INSECURE

Only “allowed” functions and filters for templates in **Drupal 8**

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

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

SOME MAJOR API CHANGES



MAJOR API CHANGES

1. A new template engine
2. New theme hooks
3. Everything renderable
4. Markup utility functions
5. Theme component library

A NEW TEMPLATE ENGINE

MAJOR API CHANGES IN DRUPAL 8

A NEW TEMPLATE ENGINE

PHPTemplate was our “engine” in **Drupal 7**

not really a template engine... it's just PHP.

A NEW TEMPLATE ENGINE

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

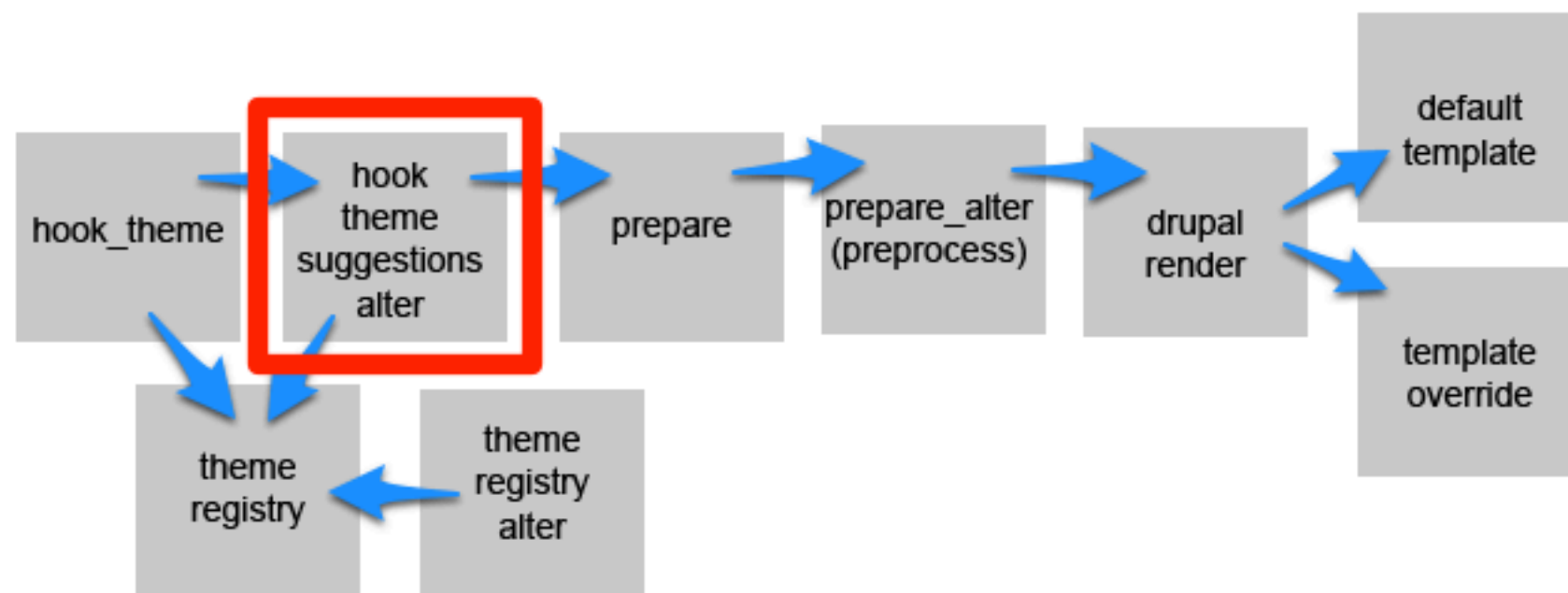
we're all grown up now!

NEW THEME HOOKS

MAJOR API CHANGES IN DRUPAL 8

NEW THEME HOOKS

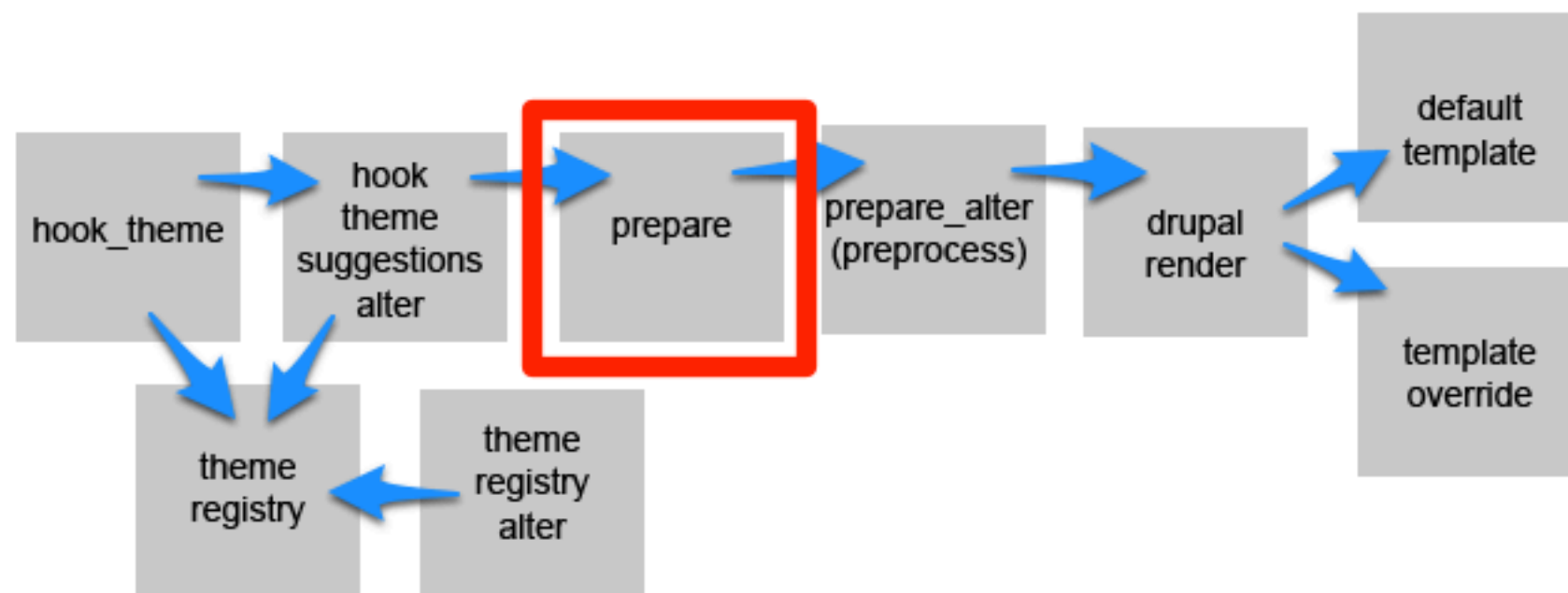
NEW: `hook_theme_suggestions_alter()` in **Drupal 8***



* we still need help implementing

NEW THEME HOOKS

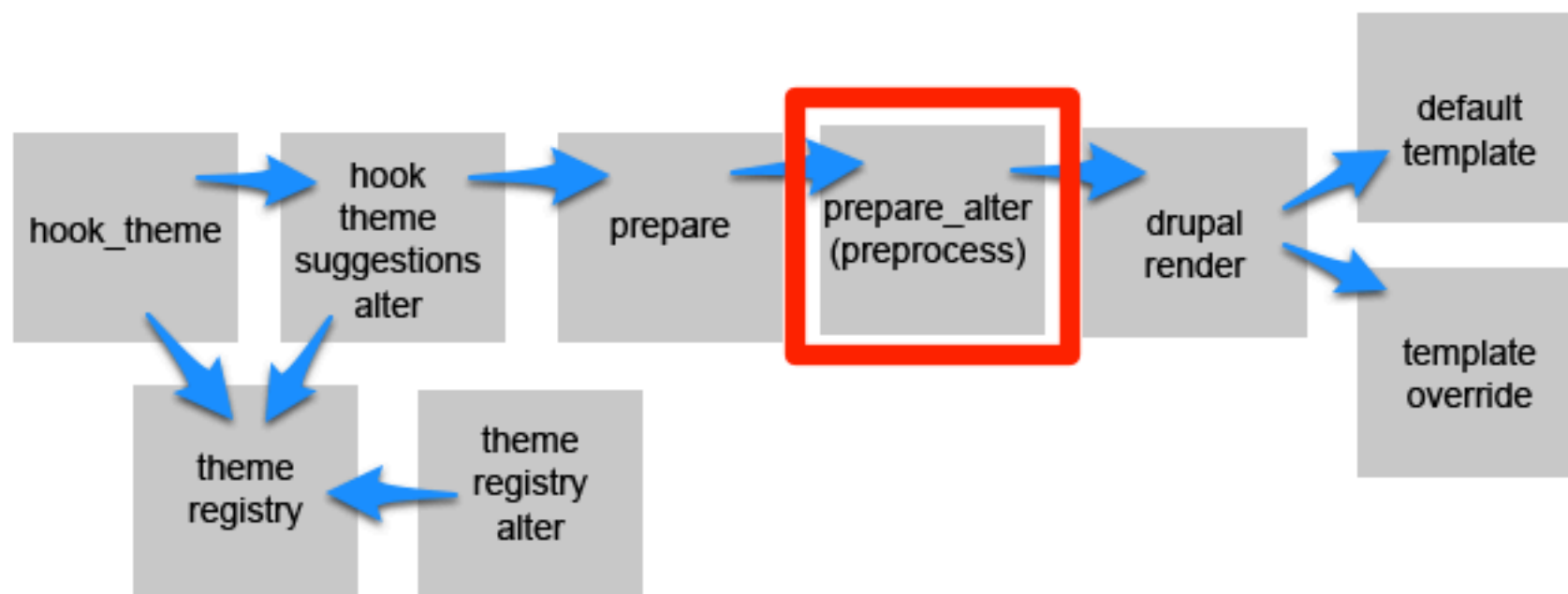
NEW: `hook_prepare()` in **Drupal 8***



* we still need help implementing

NEW THEME HOOKS

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



* may still be named `preprocess()` - TBD!

EVERYTHING RENDERABLE

MAJOR API CHANGES IN DRUPAL 8

EVERYTHING RENDERABLE

Renderable, Alterable, Escapable, and able in **Drupal 8***



* we still need help converting

MARKUP UTILITY FUNCTIONS

MAJOR API CHANGES IN DRUPAL 8

MARKUP UTILITY FUNCTIONS

Not all markup will pass through the theme layer in **Drupal 8***



* we still need help choosing

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 documenting

TWIG: OTHER WINS



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!)

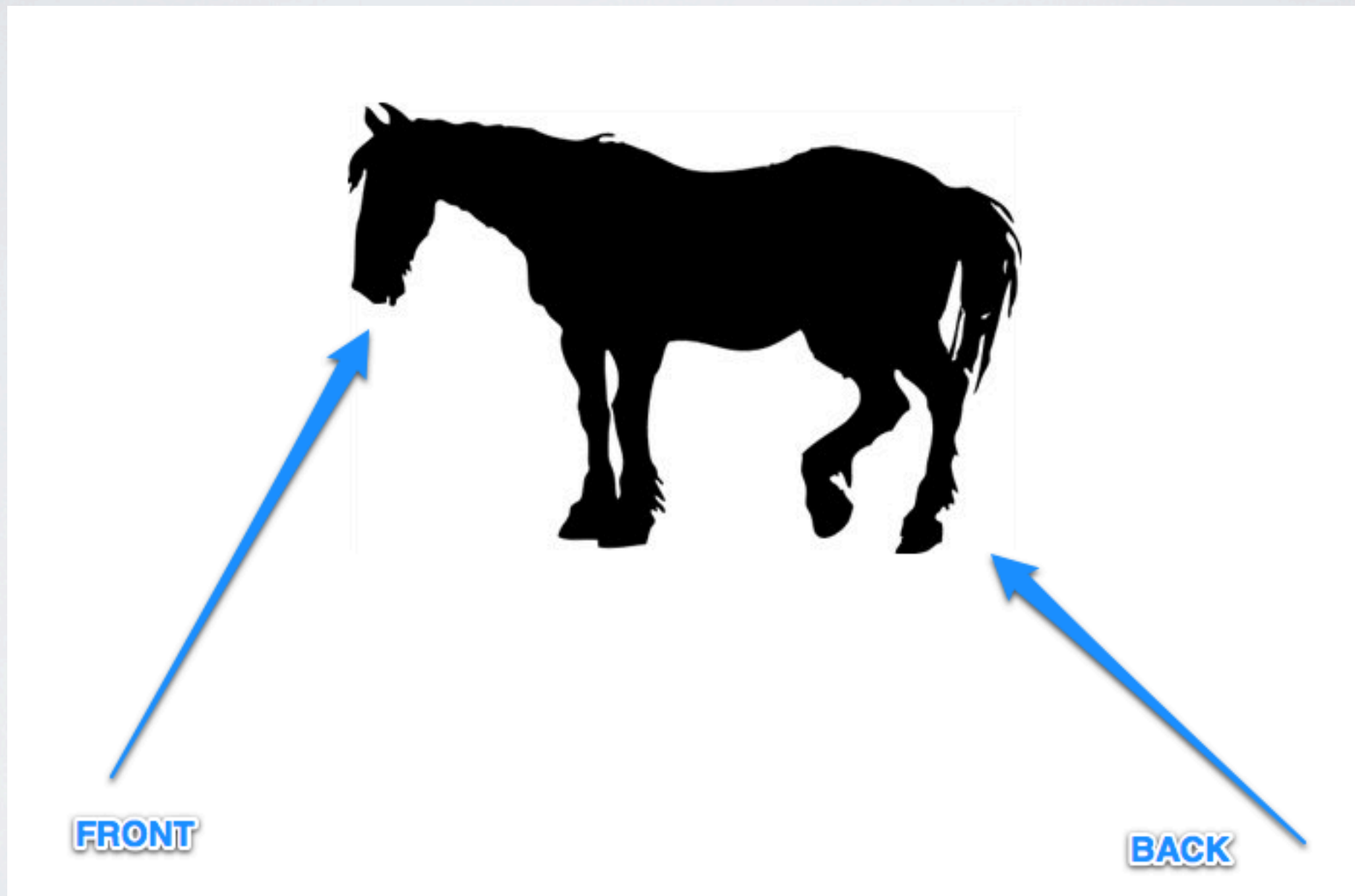
TWIG: OTHER WINS

In-browser template editing finally safe.



TWIG: OTHER WINS

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



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

TWIG: OTHER WINS

2-way communication between UI and code.



WHAT ARE WE DOING NOW?

- ★ Theme system architecture changes (probably)
- ★ Theme function conversions (w/ benchmarks)
- ★ Consolidate / remove template files
- ★ Clean up the preprocess layer
- ★ Improve the markup (& variable names)
- ★ Improve performance

HELP US GET THERE



we still need help!

NEW CONTRIBUTORS

The Twig “Initiative” has brought us many new contributors.

and, as it turns out...

Many new contributors have brought us Twig.

YOU CAN HELP!

- ★ Sprint tomorrow @ NYC Camp
- ★ Sprint next weekend @ Twin Cities Drupal Camp
- ★ Sprint @ Midwest Developer Summit
- ★ Join us online any time, #drupal-twig in IRC
- ★ Weekly meetings, Thurs 11:30a PT 2:30p ET
- ★ or create a theme for D8 - what do you think?

QUESTIONS?

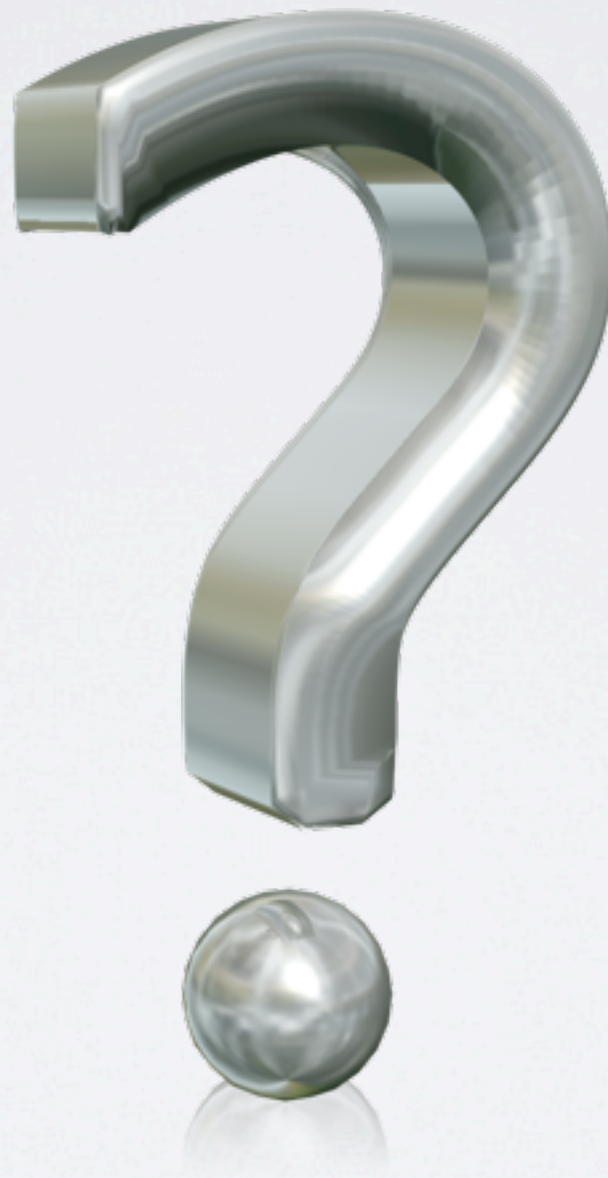


photo credits:

twig docs screenshots

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

magnifying glass

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

pain points

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

drupal mug and legos

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

batman utility belt

<http://www.evanmiller.org/nginx-modules-guide.html>

library

<http://www.frenchman.lib.me.us/>

mario win

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

inheritance

<http://www.accessexcellence.org/RC/AB/WYW/wkbooks/PAP/inheritance.php>

browsers

<http://www.atomicon.nl/disabling-cache-for-stylesheets/browsers>

horse

<http://divinerescue.org/images/backgrounds>

two way sign

<http://www.paulkonrardy.com/Blog/2WayCommunicationUseItOrLoselt.aspx>

finish line

<http://www.lifetime-weightloss.com/blog/2013/1/30/the-finishing-line-effect.html>