

An open historical map, likely a 16th-century world map, is shown. The map is divided into two panels. The left panel features a large, ornate compass rose at the top center, with a red center and a sunburst design. Below it, the word "VIRGINIA" is visible. The right panel features a large, circular, greenish object, possibly a compass or a decorative element, at the top center. Below it, the word "ANDALUSIA" is visible. The map is decorated with various symbols, including a small sunburst at the bottom center of the left panel and a small sunburst at the bottom center of the right panel. The text "NAVIGATING THE WILD SEAS OF ES6 MODULES" is overlaid in large, orange, serif font across the center of the map. The date "August 2015" is overlaid in red, serif font on the right side of the map.

# Navigating the Wild Seas of ES6 Modules

August 2015

**There be dragons!**



# The Node Dragon



**The Dragon of Syntax**



**Sonnet 130**

**The Browser Dragon**



# **The Dragon of Syntax**

# Creating a module

```
export function doIt() {}
```

```
export var meaningOfLife = 42;
```

```
function doThat() {}
```

# Using a module

**a-module.js**

```
export function doIt() {}
```

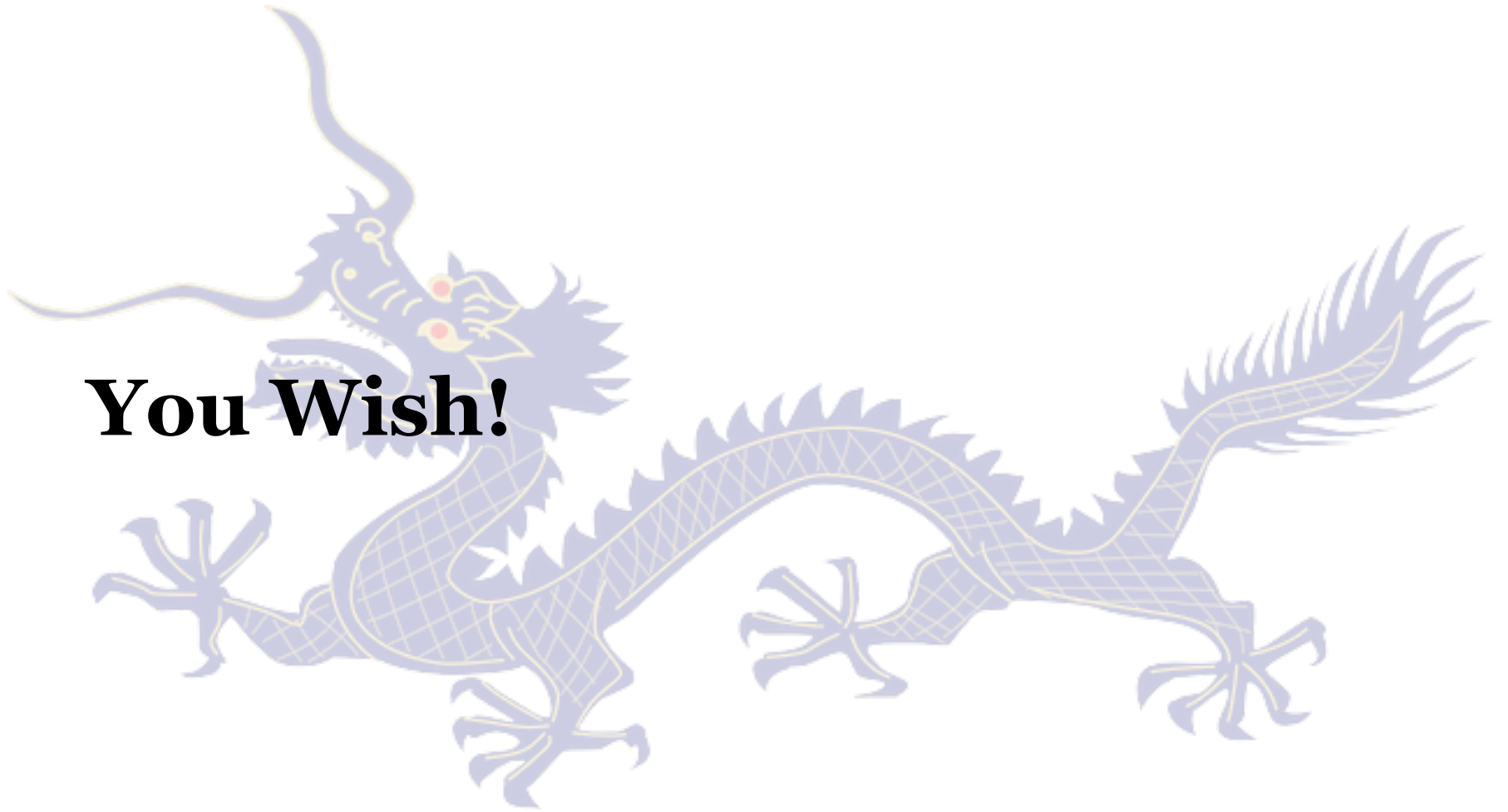
```
const meaningOfLife = 42
```

```
function doThat() {}
```

import { doIt, meaningOfLife }  
from 'a-module';

Simple, right?

**You Wish!**



**TIMTOWTDI**



# There Is More Than One Way To Do It

```
function doIt() {}  
var aVar = 42;  
function doThat() {...}
```

```
export {doIt,  
        aVar as meaningOfLife};
```

# There Is More Than One Way To Do It

```
import * as lib from 'a-module';
```

```
lib.doIt();
```

```
lib.meaningOfLife;
```

**AAAAARRRGGGGGHHH!!!**



# The dreaded default

a-module.js

```
export default 42;
```

```
import meaningOfLife  
  from 'a-module';
```

# Confusion will be my epitaph

```
export default  
    function doIt() {}
```



```
export default var  
    meaningOfLife = 42;
```



# default is just another import

```
import orOther, {something}  
    from 'a-module';
```

```
import {something}, orOther  
    from 'a-module';
```

```
import {something, default as orOther}  
    from 'a-module';
```

A marble statue of a man, likely a classical figure, is shown in a state of distress. He is leaning forward, with his head buried in his hands, suggesting grief or despair. The statue is set against a clear blue sky. The text "TJTMWTTD!" is overlaid on the image.

**TJTMWTTD!**



**There's Just Too Many Ways To  
Do Things!**



**Why Did This Happen?**

"A camel is a horse designed by a committee."



**So?**

# Do we abandon ship?



**No!**

# Prefer default over specific exports

```
export default function  
  factory() {}
```

**or...**

```
export default {  
  dolt() {}  
  meaningOfLife: 42  
}
```

# Prefer const var bindings

```
export const meaningOfLife = 42;
```

# The Node Dragon



**Sonnet 130**

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A stylized purple dragon with yellow outlines, coiled around the text. The dragon has a long, flowing mane, whiskers, and a long, segmented tail. It is depicted in a dynamic, coiled pose, with its head facing left and its body curving around the central text. The dragon's scales are represented by a grid pattern, and its claws are sharp and pointed. The overall style is reminiscent of traditional East Asian dragon art.

# **The Node Dragon**

**How do we use ES6 modules in Node?**

**Why would we do that?**

**Node has a *really* good module  
system**

# Node module

a-module.js

```
exports.doIt = function() {}  
exports.meaningOfLife = 42;
```

So Why?

```
const {doIt, meaningOfLife} =  
  require('a-module');
```

**Two words:  
isomorphic code**

**So How?**

**Native ES6 modules:  
ongoing work**



**Till then...**

# **Babel!**

```
require("babel/register");
```

# Babel!

```
export function  
  doIt() {}
```

```
exports.doIt =  
  function()
```

```
import {doIt}  
  from 'a-  
  module'
```

```
var {doIt} =  
  require('a-module')
```

Interoperability

default

```
export default 42;
```

```
exports['default'] =
```

Interoperability?

```
import mol
```

```
from 'a-
```

```
module'
```

```
var {default: mol} =  
require('a-module')
```

# And this?

```
var aModule =  
process.arch === 'win32' ?  
    require('module-win32') :  
    require('module')
```



```
//...
```

**Huh? No dynamic loading of  
modules?**

# There is!

```
var moduleName =  
    process.arch === 'win32' ?  
        'a-module-win32' : 'a-module'
```

```
System.import('a-module-win32').then(  
    aModule => { /* ... */})
```



**But it's async!**

*the node people and ES6 people are currently  
discussing how to resolve this*



**So?**

# Do we abandon ship?



**No!**

# Do this

- Use `import/export` when you can
- Fall back to `require` if you must

# The Node Dragon



**Sonnet 130**

**The Dragon of Syntax**

**The Browser Dragon**



# **The Browser Dragon**

# **The fiercest dragon of them all**



# A whole talk unto itself





**But maybe a glimpse?**

# This is illegal

```
<script>  
    import {doIt} from 'a-module';  
    // ...  
</script>
```

# You have to do this

```
<script>  
    System.import('a-module').then(  
        ({doIt}) =>  
            // ...  
    );  
</script>
```

# Or...

```
<script type=module>  
    import {doIt} from 'a-module';  
    // ...  
</script>
```

# Or maybe...

```
<module>  
    import {doIt} from 'a-module';  
    // ...  
</module>
```

**Who knows? The spec hasn't been updated in 10 months!**



# Extra! Extra! Read all about it!

Modules have their own scope



# So forget about this

```
<module>  
    import {doIt} from 'a-module';  
    // ...  
</module>  
<div onclick=doit>...</div>
```

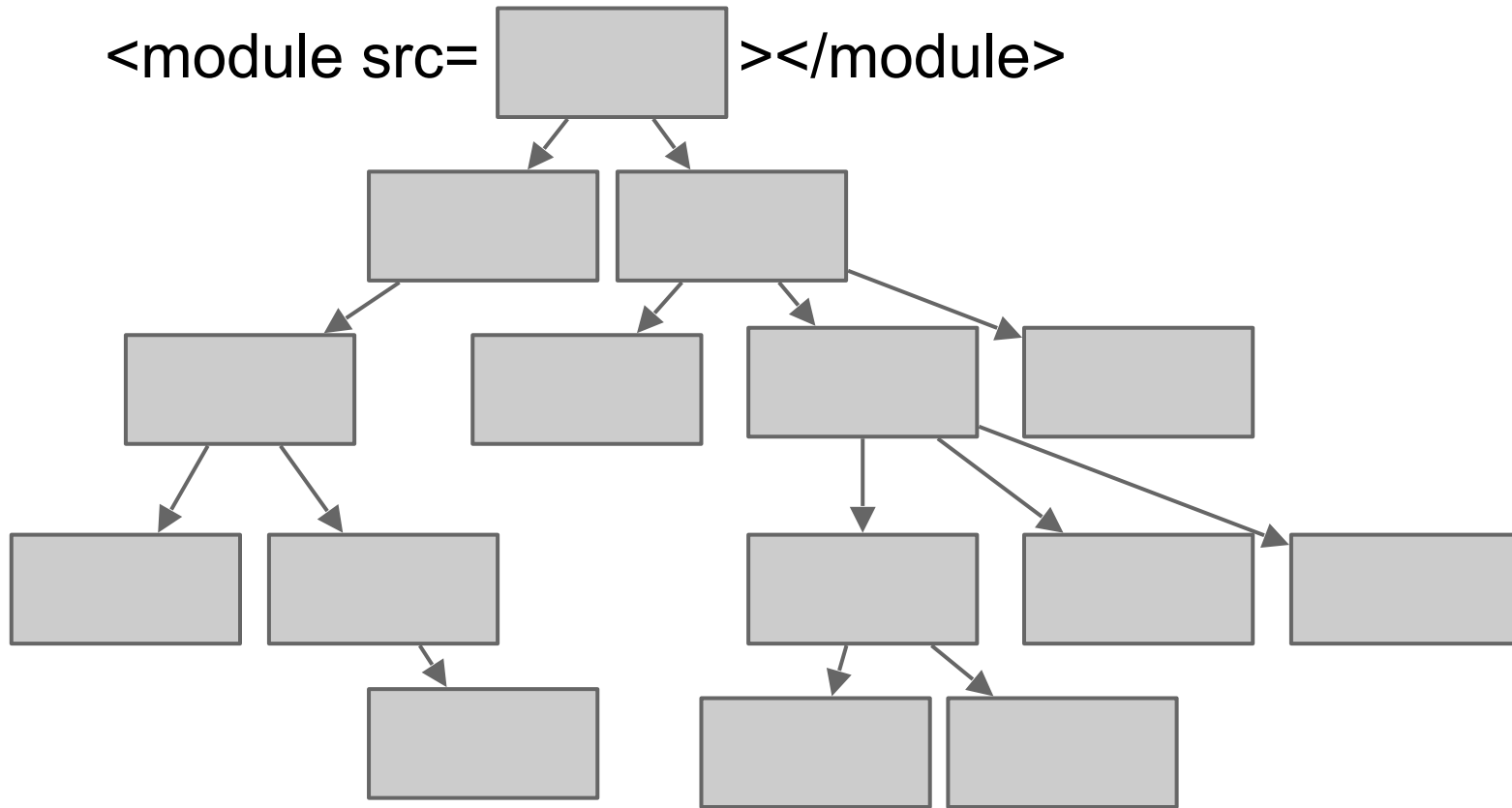


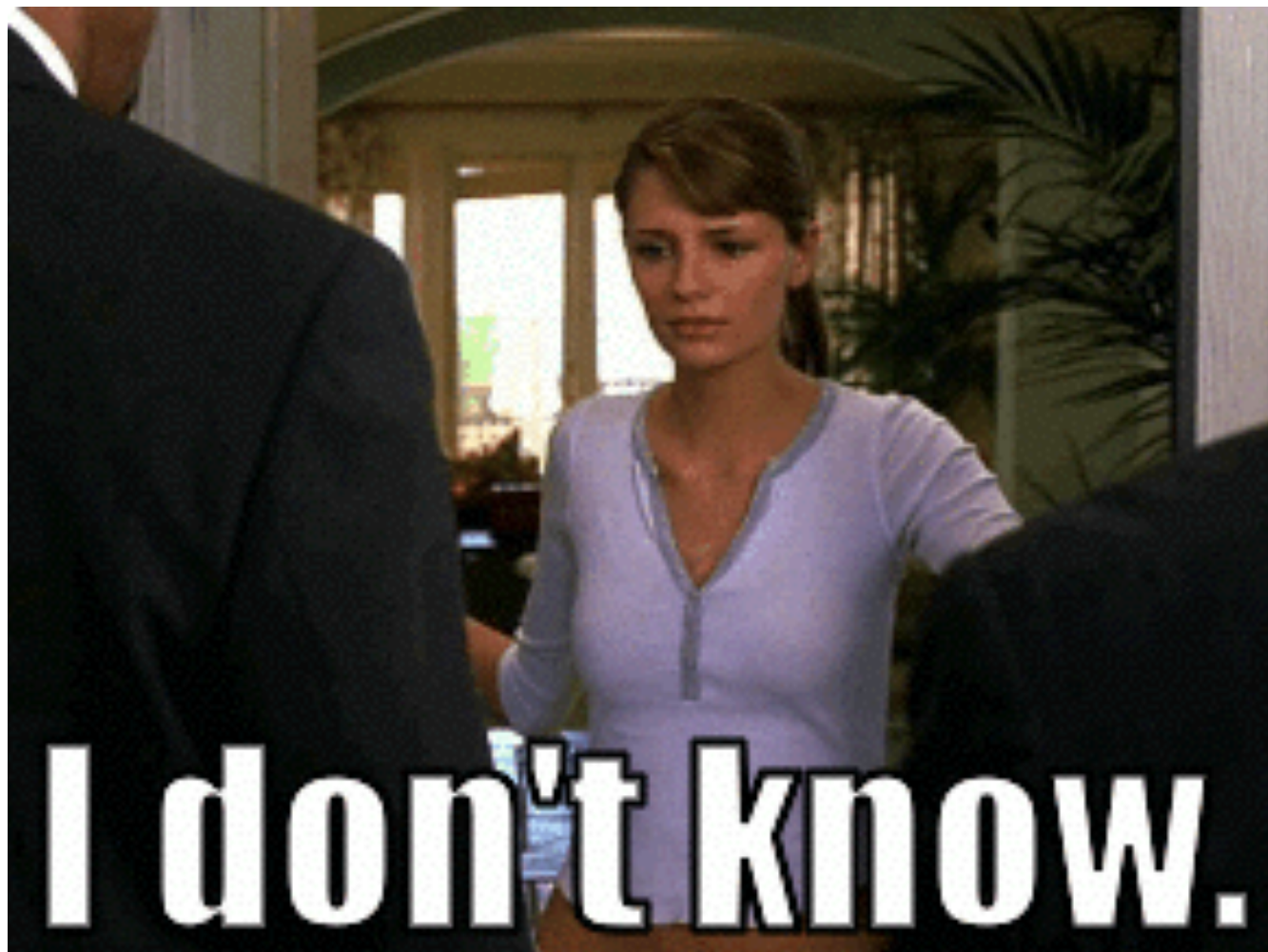
# Interoperability with AMD

- e.g. RequireJS?
- Maybe. There's *another* spec, the Loader spec, which is dealing with this
- Work in progress. Not yet close to ready.
- And has interoperability problems with Node

# And how would this work efficiently?

```
<module src=|></module>
```





**So?**

# Do we abandon ship?



**No!**

# The One-Two Punch



# Punch #1





# We've already seen it (Babel)

```
export function  
  doIt() {}
```



```
exports.doIt =  
  function() {}
```

```
import {dolt}  
  from 'a-module'
```

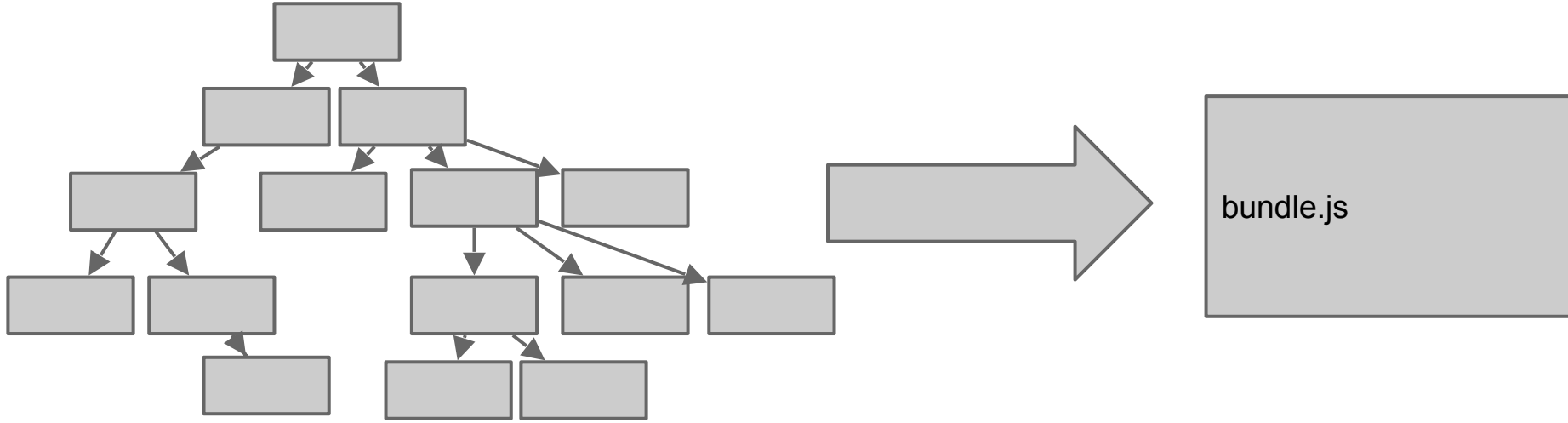


```
var {dolt} =  
  require('a-module')
```

# Punch #2



# Bundling CommonJS modules



# Use...

- **Grunt** or **Gulp** or **Broccoli** or **npm scripts**
- **Babel** or **Traceur** or **es6**
- **webpack** or **browserify**

Oh How Fun!

**But if you do all this, you get a  
very sweet carrot**

# **Isomorphic code between Node and the Browser**

**The Node Dragon**



**Sonnet 130**

**The Dragon of Syntax**

**The Browser Dragon**





# Sonnet 130

My mistress' eyes are nothing like the sun;  
Coral is far more red than her lips' red;  
If snow be white, why then her breasts are  
dun;  
If hairs be wires, black wires grow on her  
head.  
I have seen roses damasked, red and  
white,  
But no such roses see I in her cheeks;  
And in some perfumes is there more delight  
Than in the breath that from my mistress  
reeks.  
I love to hear her speak, yet well I know  
That music hath a far more pleasing sound;

I grant I never saw a goddess go;  
My mistress when she walks treads  
on the ground.

And yet, by heaven, I think my  
love as rare

As any she belied with false  
compare.

# So Go...

...and love ES6 modules like you love your beloved:

it's never perfect,  
but it's still wonderful,  
and it gets better over time

# Thank You

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