



# My God, it's Full of Tests

Code Mash 2016

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# Outline

- Context
- **Test models**
- Questions

# Context

Rule One: Automation may not injure a human being or, through inaction, allow a human being to come to harm.

# Who Is This Guy?





# Continuous Delivery

Driving Cars in a Traffic Jam by epSos.de  
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<https://flic.kr/p/9w8eWL>



# DevOps

- Automation in all things
  - Infrastructure
  - System tests
  - Monitoring
- Incremental adoption
  - Systems Thinking
  - Amplify Feedback Loops
  - Culture of Continual Experimentation and Learning



# Test Models

Rule Two: Automation must obey the orders given it by human beings except where such orders would conflict with the First Law.



# Sandbox Introduction

*Butterfly Catcher* by Jeff Hitchcock  
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<https://flic.kr/p/dBG25G>





# Build Manifest Tests



# Build Manifest Tests Demo

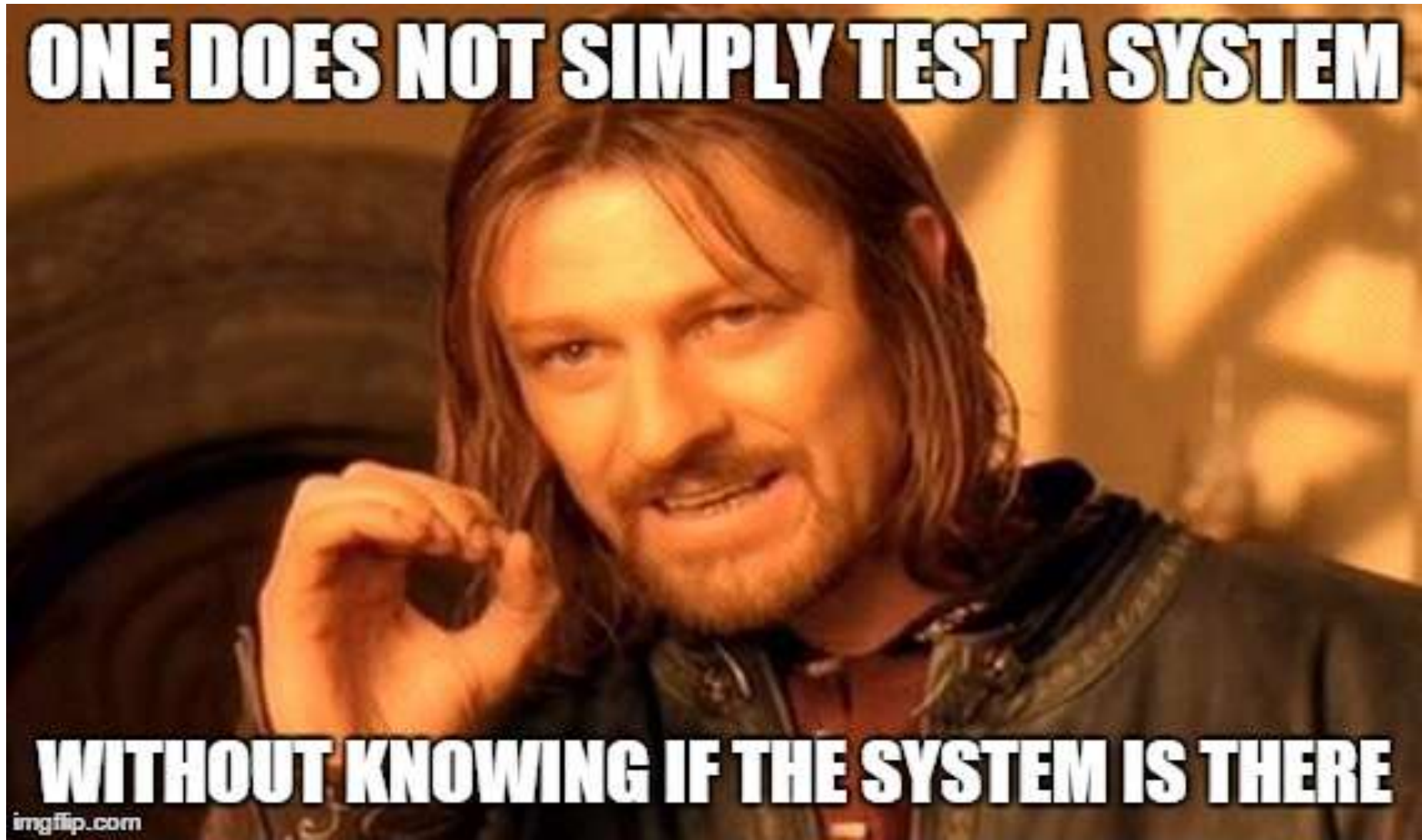
Is this even what we expect?

# Build Manifest Tests

A model for comparing what we built to what was deployed.

```
"Manifest": [  
  {  
    "File": "SpectacledBear.CodeMash2016.WebApi.dll",  
    "Version": "1.0.0.0",  
    "Checksum": "24B381CFEBF3BC96C300676717E90F7B"  
  },  
  ...  
]
```

# Build Validation Tests





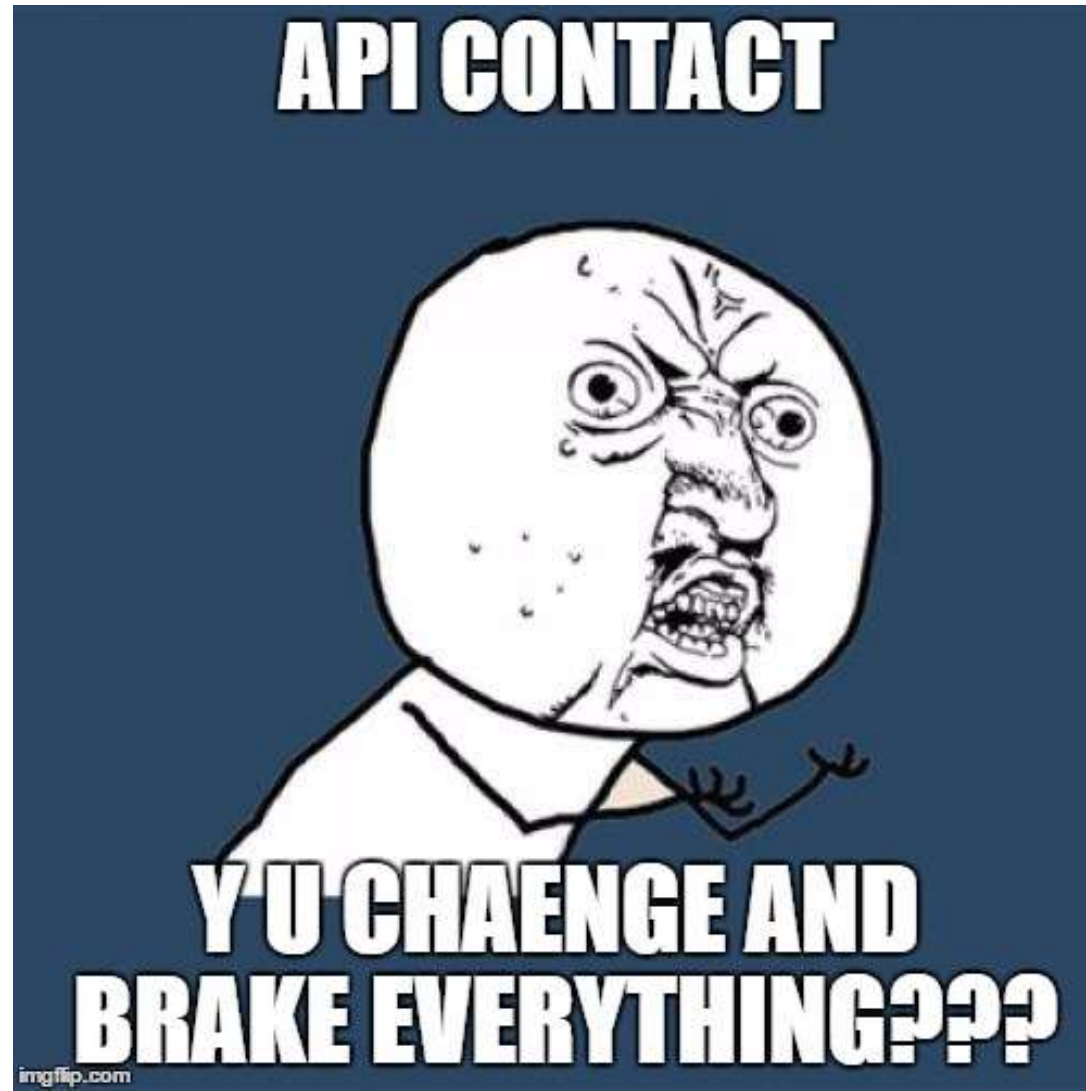
# Build Validation Tests Demo

Is the product even there?

# Build Validation Tests

A model for checking an environment prior to executing other automated tests.

# Contract Tests



# Contract Tests Demo

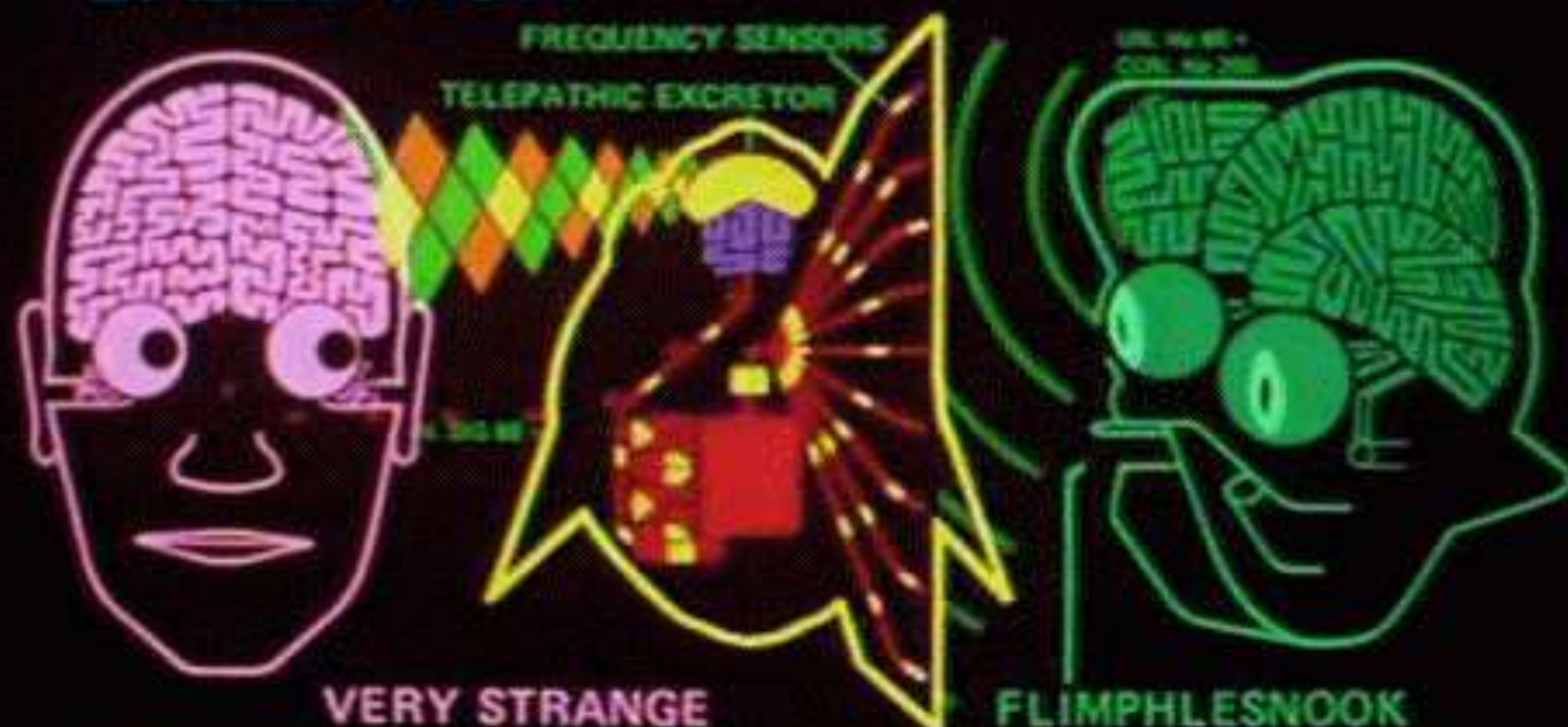
How do we test our boundaries earlier?



# Contract Tests

A model for checking a consumer-service contract in isolation from each other.

# BABEL FISH



UNCONSCIOUS FREQUENCIES AND THEN EXCRETING  
TELEPATHICALLY A MATRIX FORMED FROM THE  
CONSCIOUS FREQUENCIES AND NERVE SIGNALS  
PICKED UP FROM THE SPEECH CENTRES OF THE BRAIN.

# Domain Language Tests Demo

Why do we stop using our language when we test our system?

# Domain Language Tests

A model for documenting specifications as tests.



# Monitoring Tests



# Monitoring Tests Demo

How do we keep up with all of these moving pieces?

# Monitoring Tests

A model for monitoring a system for evaluation and comparison.

```
{  
    "Result" : "pass",  
    "QueryResponseTime" : 13,  
    "TotalChanges" : 2,  
    "SqliteVersion" : "3.8.11.1",  
    "Tables" : ["Hobbits"]  
}
```

# Continuous Improvement

- What are your assumptions and behaviours that are not being checked?
- Experiment and iterate!
- Think more on the five models presented:
  - Manifest checking
  - Build validation
  - Service contract validation
  - Domain specifications
  - Health monitoring
- Go forth and learn!

# Questions?

Rule Three: Automation must protect its own existence as long as such protection does not conflict with the First or Second Laws.

# Where To Find Me/This Talk

SpectacledBear  
on Twitter and GitHub

[thekyle@gmail.com](mailto:thekyle@gmail.com)

[https://github.com/  
SpectacledBear/  
codemash-2016](https://github.com/SpectacledBear/codemash-2016)

HOW LONG CAN YOU WORK ON MAKING A ROUTINE TASK MORE  
EFFICIENT BEFORE YOU'RE SPENDING MORE TIME THAN YOU SAVE?  
(ACROSS FIVE YEARS)

		HOW OFTEN YOU DO THE TASK					
		50/DAY	5/DAY	DAILY	WEEKLY	MONTHLY	YEARLY
HOW MUCH TIME YOU SHAVE OFF	1 SECOND	1 DAY	2 HOURS	30 MINUTES	4 MINUTES	1 MINUTE	5 SECONDS
	5 SECONDS	5 DAYS	12 HOURS	2 HOURS	21 MINUTES	5 MINUTES	25 SECONDS
	30 SECONDS	4 WEEKS	3 DAYS	12 HOURS	2 HOURS	30 MINUTES	2 MINUTES
	1 MINUTE	8 WEEKS	6 DAYS	1 DAY	4 HOURS	1 HOUR	5 MINUTES
	5 MINUTES	9 MONTHS	4 WEEKS	6 DAYS	21 HOURS	5 HOURS	25 MINUTES
	30 MINUTES		6 MONTHS	5 WEEKS	5 DAYS	1 DAY	2 HOURS
	1 HOUR		10 MONTHS	2 MONTHS	10 DAYS	2 DAYS	5 HOURS
	6 HOURS				2 MONTHS	2 WEEKS	1 DAY
	1 DAY					8 WEEKS	5 DAYS

<https://xkcd.com/1205/>



# Resources

- The Three Ways by Gene Kim  
<http://itrevolution.com/the-three-ways-principles-underpinning-devops/>
- Health Endpoint Monitoring Pattern  
<https://msdn.microsoft.com/en-us/library/dn589789.aspx>
- PactNet test framework  
<https://github.com/SEEK-Jobs/pact-net>
- Machine.Specifications  
<https://github.com/machine/machine.specifications>