

The 5% Future of Testing

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I predicted eleven years ago...


In ten years...

- ★ For 95% of the testing world, nothing much will change.
- ★★ Testing practice will continue to be dominated by local influences.
- ★★ Articles, books, and papers will say substantially the same things as they do today.
- ⊘ Florida Tech will have a respected undergraduate degree program in software testing.
- ★ Test automation tools will get better, yet still be thinly deployed, poorly applied, and lag far behind the general technology curve.

I predicted eleven years ago...

In ten years...

* Although certification programs will be firmly established, relatively few testers will participate.

 In general, testers will be no more respected than they are today.

** In the USA*

I predicted eleven years ago...

In ten years, for the top 5%...

★ Testing sub-specialties and communities (based on industry segment or technology) will become self-aware and aware of each other.

⊘ Each community will have evolved its own rich lore of methods and heuristics.

★★★ Forums for test methodology dialog will be established.

★★ Heuristic testing will have emerged as a discipline, incorporating wisdom from fields beyond computer science.

⊘ Professional certification in heuristic testing will be available.

★★★ More resources will be available to support self-education.

Bad Stuff I Missed

- **Bad Stuff**

- That **certification** marketing would brainwash much of Europe. *Despite no evidence that it helps anyone do anything useful that they could not easily do without certification.*
- That **Agile** (especially Scrum) would become a global, popular and poorly executed practice, which would in turn impact testing.
- That **outsourcing** would become a heedless stampede toward mediocrity at any (low) cost.

Good Stuff I Missed

■ Good Stuff

- That **open source tooling** would dramatically improve the options for automation.
- That excellent **online collaboration tools** would help testers create better communities dispersed over time and space.
- That **video recordkeeping** would become viable for test documentation.
- That **crowdsourcing** (uTest) would provide new opportunities for testers.
- The rising global reputation of **national testing communities** in India and Sweden.

**But as far as practices and
skills go...**

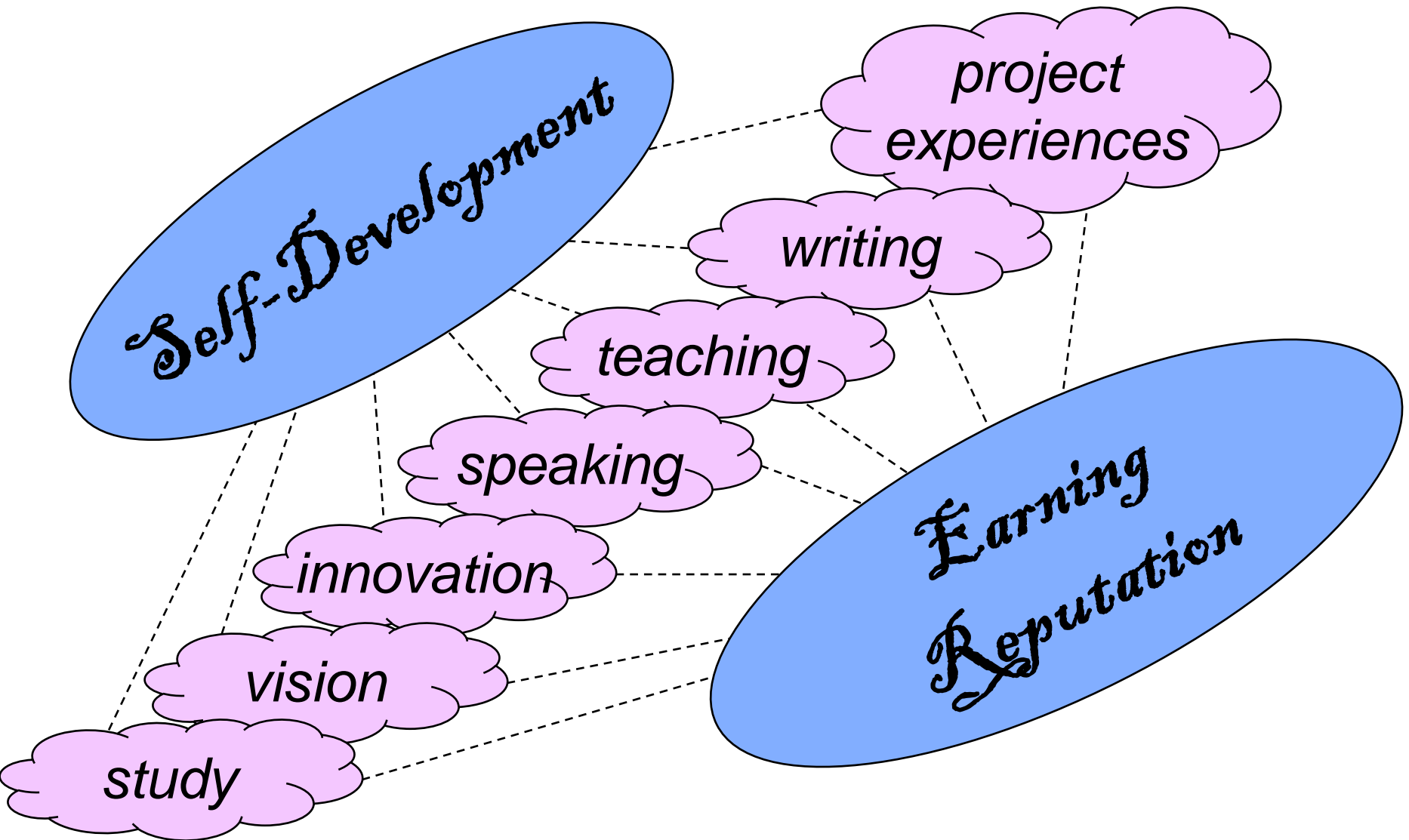
Nothing has changed

(for ~95% of testers)

**(so... what about the 5% who are
serious students of testing?)**

Getting good and getting credit

(both are optional)



The Buccaneer-Scholar

- “Buccaneering” is a metaphor I came up with years ago to describe how certain disruptive people, such as me, get along in our lives.
- Even if you don’t feel much like a buccaneer, some of what buccaneers do might be relevant for your testing career **in this economy**.
- I define it like this:
 - *A buccaneer-scholar is anyone whose love of learning is not muzzled, yoked or shackled by any institution or authority; whose mind is driven to wander and find its own voice and place in the world.*

~~THE PRINCE~~
BY NICCOLO MACHIAVELLI

TESTER

CHAPTER XXI

tester
HOW A ~~PRINCE~~ SHOULD BEAR HIMSELF SO AS TO ACQUIRE
REPUTATION

tester
NOTHING makes a ~~Prince~~ so well thought of as to undertake great enterprises and give striking proofs of his capacity.

Strikingly prove your capacity!

THE HISTORY

OF THE

BUCCANEERS OF AMERICA;

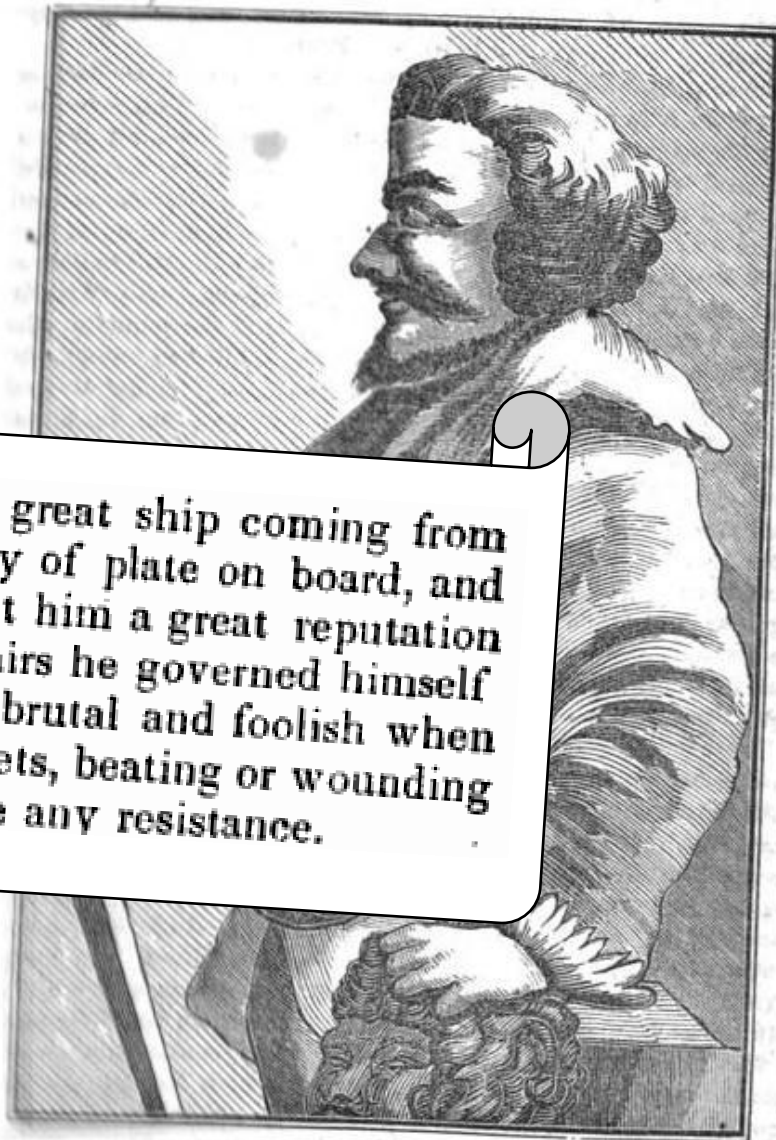
Within a few days after, he took a great ship coming from New Spain, which had a great quantity of plate on board, and carried it to Jamaica. This action got him a great reputation at home, and though in his private affairs he governed himself very well, he would oftentimes appear brutal and foolish when in drink, running up and down the streets, beating or wounding those he met, no person daring to make any resistance.

AND IN THE GREAT SOUTH SEA,

SUCCEEDING THE CIVIL WARS IN ENGLAND.

NEW EDITION;

WITH SOME INTRODUCTORY NOTICES OF PIRACIES ON THE COAST OF
NEW ENGLAND, TO THE YEAR 1724.



Roche Brasiliano.

Three Kinds of Buccaneering Credentials

NOTE:
Reputation
can be **public**
local, or **instant**



portfolio
Past work that
you can show

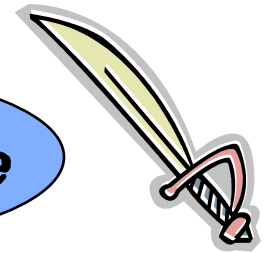
reputation

Stories told
about you

performance

Live demo
of your ability


Credibility!



Testing Flash Mob

“The Airport’s website has a Parking Lot Fee Calculator ... and it’s buggy. Want to practice your testing skills on it? It’s free – <http://www.grr.org/ParkCalc.php>. What bugs can you find? Feel free to leave them as comments, or, if you’re really ambitious, make your own blog post and leave comments pointing to your blog.”

--- Matt Heusser

Choose a Lot	Short-Term Parking 
Choose Entry Date and Time	-6.2851001174 <input checked="" type="radio"/> AM <input type="radio"/> PM -1.7e16 
Choose Leaving Date and Time	6.278e11:4256 <input type="radio"/> AM <input checked="" type="radio"/> PM 1.7e16 
COST	\$ 5,124,095,576,030,438.00 (2.13503982335E+14 Days, 6 Hours, 49.6 Minutes)

Calculate

<http://www.grr.org/ParkCalc.php>



Lanette Creamer

James commenting on Lanette's definition of "test"

2009-11-14 19:46:50

jamesmarcusbach: @lanettecream I think it's shallow. I think you can do a lot better. Anyway, I'd be interested to see your analysis of that definition.

2009-11-14 19:48:34

jamesmarcusbach: @lanettecream Another way to say it: maybe that definition is okay-- but what does it MEAN? Do you know? Have you really thought it through?



Lanette Creamer

<http://blog.testyredhead.com/>

Why is a test an action? What about those tests that sit in your database? Do they not count? Of COURSE they don't count. They do not become a test until someone or something takes action. They are just a plan. Remember, TEST is a verb. Also, just because you want it to be so does not mean that software is going to test itself.

There was a big battle in my mind over produces. **Does it create data? Or does it produce data? Or does it discover data that is already there?** Well, the action of the test produces some sort of data I believe. It may not create it, but produces to me also means presents, so it presents it somewhere else. When I am testing I am hunting data to tell me something about the software under test. **What about a case where you look at the launched product, notice a button missing and did not have any input or output, but still reported a value bug?** To me, this is still a test because there was an action, there was learned information and there was evaluation for the purpose of evaluating product quality.

Lots of new ideas!

- Session-based test management
- Thread-based test management
- Exploratory/scripted continuum
- Automatic test matrices
- Video bug reports
- Paired testing
- Guideword heuristics
- Focusing/defocusing heuristics
- Testing playbooks
- Sapient testing vocabulary
- Testing games

Skills, too!

- Test framing
- Test factoring
- Test chartering
- Test narration
- Test notetaking
- Prospective testing
- Test heuristic design
- Bug advocacy

SPACE-FILLING CURVES

L-SYSTEMS

PENROSE TILES

TRAVELLING SALESMAN PROBLEM

ANALYSIS OF RANDOM NETWORKS

PHYSICS APPLET

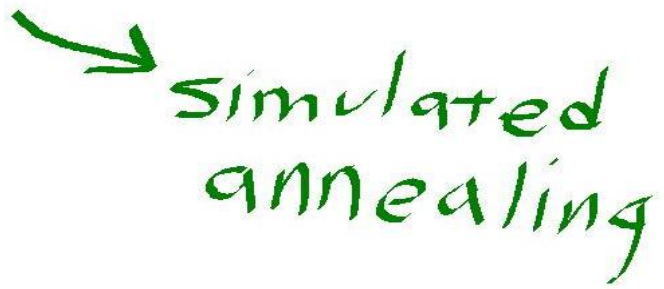
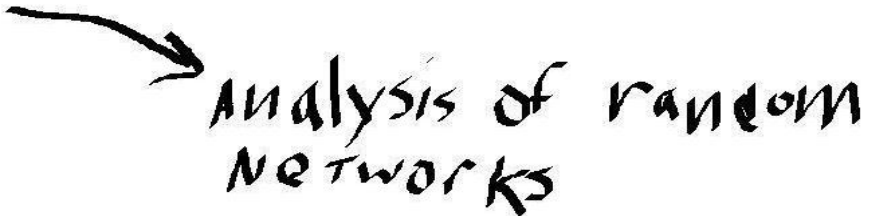
SIMULATED ANNEALING

DIFFUSION-LIMITED AGGREGATION

SELF-ORGANIZATION

SNOWFLAKES

FALLING SAND GAME



The Science Behind Exploratory Testing

Theories of Exploration

- Heirarchical temporal memory theory
- Curiosity theory
- Bounded rationality & satisficing
- Sampling theory
- Swarm intelligence
- Control theory
- Science as questioning process
- Science as error probing

Direct Study of Exploratory or Scripted Problem-Solving

- A couple of lame studies funded by Microsoft
- A couple of beautiful studies by Herbert Simon
- Studies of Airplane Pilots
- Studies of Doctors
- Education Theory
 - Theory of Play
 - Constructionism
 - Learning from surprise (DLPFC)
 - Ends-in-view problems
 - Questioning methods
 - Physics by Inquiry
- Prospect theory
- Decision theory
- Adaptive expertise vs. routine expertise
- Stress inoculation

Justification of ET vs. Script-Heavy Approach

- Automation bias
- Naturalistic inquiry
- Plausible Reasoning (Polya)
- Exploratory theorem proving (Solow)
- Pervasive heuristics (Koen)
- Studies of decision-making under stress
- Tacit vs. propositional knowledge
- Studies of interpreting instructions

Methodology for Studying ET

- Qualitative Research
- Naturalistic Inquiry
- Ethnomethodology
- Situated Action Theory
- Distributed Cognition
- Grounded Theory
- Activity Theory
- Symbolic Interactionism
- Exploratory Research Designs
- Brain scans
- Task analysis

Insight into ET Practice

- Identification and study of specific heuristics
- Focusing and defocusing techniques
- Abductive inference
- Critical rationalism (conjecture and refutation)
- Sensemaking (extracted cues)
- Science of design
- Formative evaluation methods
- Enactment

What is the 5% Future?

- Outrun and out-think the certification and standardization zombies. *Make them irrelevant.*
- Sapient tester blogging and tweeting communities.
- Practical self and peer-education (e.g. Weekend Testers, Peer Conferences, “Rat Pack”, IM coaching, online BBST course).
- A strong ethical focus.
- Testing organizations embracing pluralism, such as Association of Software Testing and the Context Driven testing community.
- Oh and here’s my hope...

My Hope

- ...is a much smaller testing field. Where people who don't care to educate themselves get outsourced away and then the outsource contracts canceled.
- A much smaller community of highly skilled and ethical testers can work with domain experts and programmers to serve all the testing needed in large companies that want to do a great job.