

# *The Buccaneer Tester*



*James Marcus Bach*

# What's Special About Testing

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- There are few people around to teach you how to test.
- Most of what is taught as “testing” is unreliable or misleading folklore.
- Testing is a complex problem-solving activity.
- Learning testing on your own doesn't cost you much, you don't need anyone's permission, and it generally poses no threat to life or property.

## However...

- It's hard to know if you are doing it well.
- Good testing varies quite a lot with the context.

# What's Special About Testing

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**Testing IS learning!**

**...and unlearning what ain't so.**

# The Buccaneer-Scholar

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- 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.
- This way of being has sometimes been called autodidact, individualist, anarchist, non-conformist, contrarian, bohemian, skeptic, hacker, hippie, slacker, seeker, philosoph, or free thinker. **None of those fit for me.**

# Buccaneer Metaphor

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- The Spanish Main, circa 1650
- Sailing Ships and Wind
- The Captain and Crew
- Other Buccaneer Vessels
- Merchant Vessels
- Treasure
- Villagers and Tavern Keepers
- The Navy



# Are you a buccaneer-scholar?



You live free.

- **First-hand knowledge:** If there's a conflict between learning from your experience (e.g. exploration, experimentation, observation, or testing) and learning from an authority (e.g. lecture, rules, or demonstrations), you tend to choose personal experience.
- **Self-directed learning:** If there's a conflict between following your inner compass for learning (your impulses, obsessions, or intuitions) and following an established learning plan (even your own plan), you tend to go with the inner compass. When it comes to your own learning process, your methods are heuristic, rather than dogmatic.

(Independence)



You hunt ideas.

- **Curiosity drives you:** If there's a choice among ideas or actions of apparently equal merit, you tend to prefer the less conventional or less familiar. You are intrigued by the potential power of novel and diverse ideas.
- **Puzzles intrigue you:** You are more motivated by puzzles, problems, and mysteries than by routine tasks.
- **Complexity dares you:** You think if someone else learned it, so can you. You suspect that a lot of things that look complex are really quite simple, if you can just discover the organizing principles.

(Exploration)



You win your place in the world of thinkers.

- **You construct yourself:** You don't accept indoctrination. You are not a passive vessel. For you, learning is a process of ongoing personal transformation and sensemaking, not just fact wrangling. Your identity is thinker-learner-teacher.
- **You earn your reputation:** You are suspicious of titles and certifications. You establish and maintain your reputation as a thinker through the merit of your ideas. You may not care what *many* people think of you, but you want to earn a place of respect in the minds of people whom you respect.

(Credibility)

# Outline of My System of Learning

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- **S**couting Obsessively
- **A**uthentic Problems
- **C**ognitive Savvy
- **K**nowledge Attracts Knowledge
- **E**xperimentation
- **D**isposable Time
- **S**tories
- **C**ontrasting Ideas
- **O**ther Minds
- **W**ords and Pictures
- **S**ystems Thinking

# Major Learning Heuristics

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- Principle of Peripheral Wisdom
- Principle of Alternation
- Cyclic Learning
- Obsess and Forget
- Plunge in and Quit
- Procrastinate and Push

# **Continuous Self-Education:**

## *Choosing What and When is Situational*

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- I learn **whatever seems interesting** about what's happening now.
- I scout resources and learn **whatever looks helpful**.
- When I need to **solve an important problem**, or look back on one, I learn whatever will help me solve it.
- When I screw up, I **study my failure**.
- I play games and learn **what helps me win**.
- I choose whom I respect, and then learn **what gains me status** among them.
- I learn **things inspired by or recommended by someone else** who seems interesting to me.
- I study **whatever resolves my confusion about the world**.
- I maintain a list of topics and skills that I believe will make me better, then learn about something within **my personal syllabus**.
- I study **whatever helps me learn better**.

# **Continuous Self-Education:**

## *Choosing What and When is Situational*

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- What's happening now?
- Are there books or references here?
- Am I facing an important problem now?
- Have I just screwed something up?
- Is this a game I want to win?
- Do I feel like impressing [Cem, Michael, etc.] today?
- What about that book [Cem, Michael, etc.] recommended?
- Am I confused right now?
- What do I know about testing?
- Can I get an edge by learning to learn better?

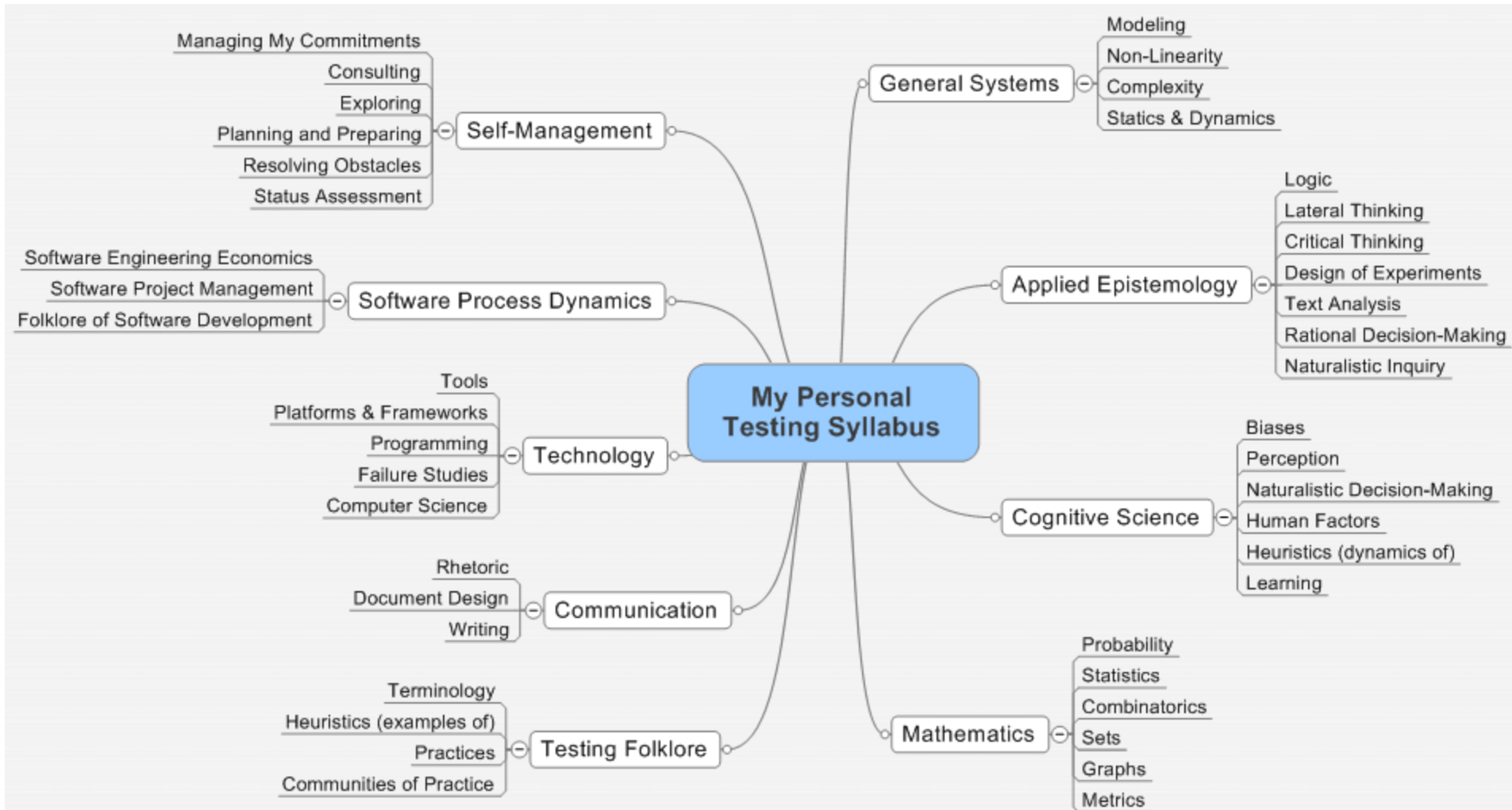
# **From My Personal Syllabus:**

## *Important Things to Learn About Testing*

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- The key idea behind each “buzzword” test technique I might be asked about.
- A precise, expressive testing vocabulary for my philosophy of testing.
- The ability to speak in precise technical terms about my testing, and to articulate a story about my thought processes.
- How to analyze anything (now!)
- How to distinguish practices from contexts, and understand their relationship.
- Descriptive and normative aspects of observation and inference.
- Basic probability, statistics, and combinatorics.
- How to design cognitive artifacts.
- How to design and use heuristics.
- My personal collection of testing heuristics.
- Helpful software tools.
- A smattering of many different technologies.
- The Perl language.

# My (Partial) Testing Syllabus



# What Level of Learning?

- **Level 0: Oblivious**
  - I don't know that there is anything here to learn. Perhaps I am unconsciously learning.  
(*example: frenetic test execution*)
- **Level 1: Aware, yet intimidated**
  - I now realize there is something here to learn, but I'm worried that I'm too stupid to learn it. I'm worried that I will be humiliated or hurt by my mistakes.
  - (*example: academic testing theory*)
- **Level 2: Capable, yet incoherent**
  - I feel I *can* learn this subject or skill, and that I am learning it. I am no longer intimidated by people who know more than me. I no longer feel that I'm just pretending. But, I have a hard time explaining or defending what I think and do.
  - (*example: test oracles*)
- **Level 3: Coherent, yet complacent**
  - Now I feel like I know what I'm doing; reasonably competent to discuss or practice. What I say sounds like what I think I know. But, I may no longer be learning very much.
  - (*example: boundary testing*)
- **Level 3+: Expertise, artistry, invention**
  - Now I feel productively self-critical, rather than complacently good enough. I want to take risks, invent, teach, and push myself. I finally feel like a real *student of the craft!*

# The Bowstring Effect

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1. Try to solve a difficult, but just solvable problem.
2. Throw yourself into that problem.
3. *Don't accept any hint or help* unless you first **exhaust** all your ideas and resources.
4. You must struggle with it.
  - If the problem is too easy, you won't learn much.
  - If you accept hints or help too soon, you won't learn much.
  - If the problem is too hard, you will lose hope.
5. If you struggle enough with a problem that is just within your ability to solve, *whether or not you actually solve it*, the struggling will act as a taut bowstring that drives the arrow of new learning deep into your mind.