Exploratory Testing

Inside the Spectator Sport

PNSQC 2006
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October 11, 2006

Assumption

* you've done exploratory testing…

* or might need to do it…

* so you'll want to know how it's done

* or at least care about it enough

* to know if it's done well

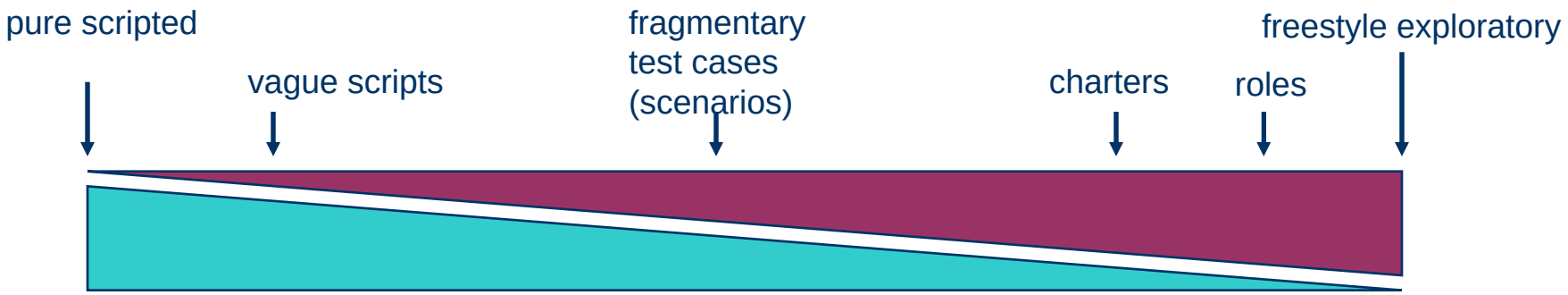
The problem

1) "What's the big deal? Exploratory testing is random pounding on the keys. A child could do it, and that's the point, right?"

2) "How she finds those great bugs without test cases, I'll never know. I guess some people are just natural explorers -- you either have it or you don't -- and I just don't have her knack for it."

These are limited perspectives, but common sentiments I've heard over the years, so this talk is my counter-argument. It is about how exploratory testing is a compilation of systemically observable, evaluatable and *teachable* skills.

Scripted vs. exploratory



To know where a test falls on this scale, ask yourself: *"to what extent am I in control of the test, and from where did the idea originate?"*

Paradigmatic examples

- **Mike Kelly**: Retesting and testing around a defect

- **Scott Barber**: The developer walks to my desk and asks “can you whip up a test to see if...”

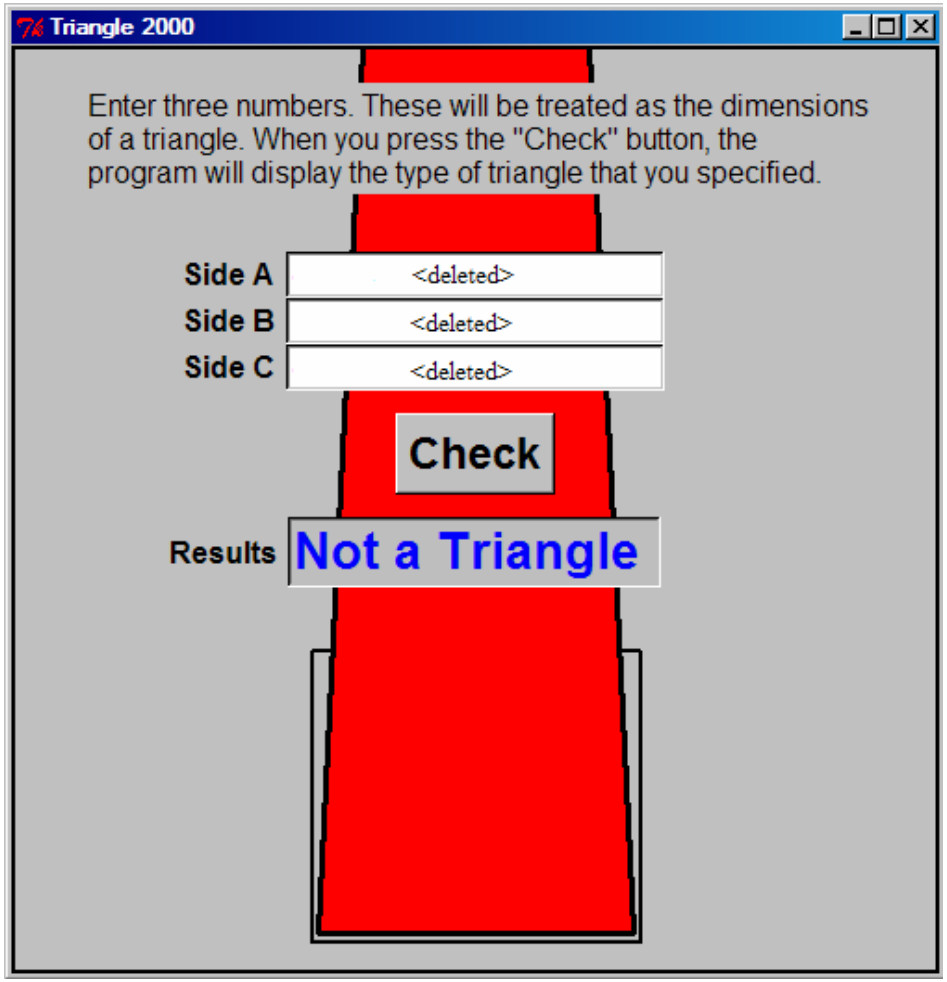
- **Michael Bolton**: Working with a new build of an existing product, checking for bug fixes by using old test paradigms with new variations; not under the control of a script

- **James Bach**: “Please investigate this puzzling situation”, “Please test this product that doesn’t yet exist”

- **Cem Kaner**: Tests from a bug taxonomy or “quick test” list

- **James Lyndsay**: Once a script has executed, choosing different data and re-executing

ET in action: Repro this bug



How did you *find* that?

Some Exploration Skills and Tactics

"MR.Q COMC GOARABC R&R?"

Modeling
Resourcing
Questioning

Chartering
Observing
Manipulating
Collaboration

Generating/Elaborating
Overproduction/Abandonment
Abandonment/Recovery
Refocusing
Alternating
Branching/Backtracking
Conjecturing

Recording
Reporting

Exploratory testing is a mindset using this skillset.

Modeling

Composing, describing, and working with mental models of the things you are exploring. Identifying relevant dimensions, variables, and dynamics. A good mental model may manifest itself as having a “feel” for the product; intuitively grasping how it works.

Resourcing

Obtaining tools and information to support your effort. Exploring sources of such tools and information. Getting people to help you.

Questioning

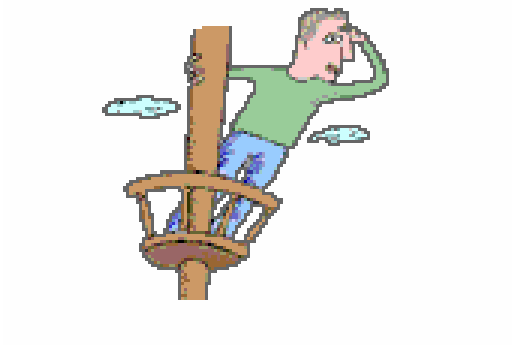
Identifying missing information, conceiving of questions, and asking questions in a way that elicits the information that you seek.

Chartering

Making your own decisions about what you will work on and how you will work. Understanding your client's needs, the problems you must solve, and assuring that your work is on target.

Observing

Gathering empirical data about the object of your study; collecting different kinds of data, or data about different aspects of the object. Designing experiments and establishing lab procedures.



Manipulating

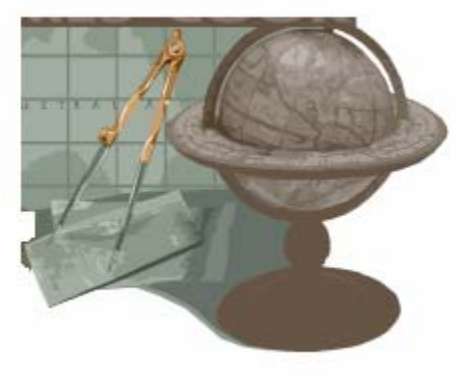
Making and managing contact with the object of your study; configuring and interacting with it.

Collaboration

Working and thinking with another person on the same problem; group problem-solving.

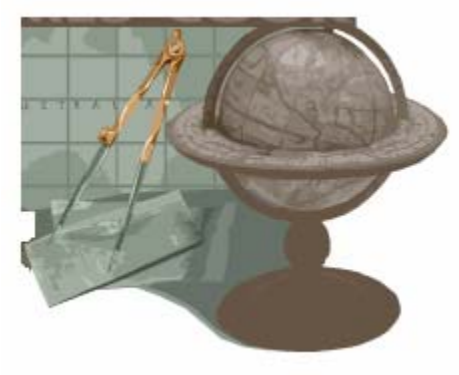
Generating/Elaborating

Working quickly in a manner good enough for the circumstances. Revisiting the solution later to extend, refine, refactor, or correct it.



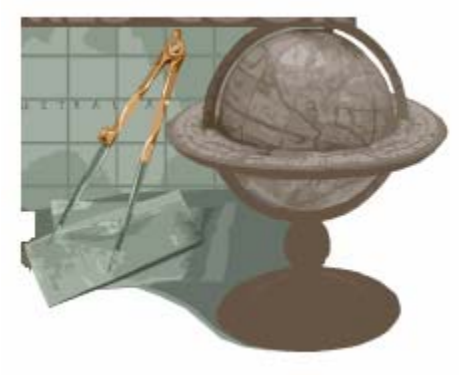
Overproduction/Abandonment

Producing many different speculative ideas and making speculative experiments, more than you probably need, then abandoning what doesn't work. Examples are brainstorming, trial and error, "bracketing" in photography, genetic algorithms, free market dynamics.



Abandonment/Recovery

Abandoning ideas and materials in such a way as to facilitate their recovery, should they need to be revisited. Maintaining a “boneyard” of old ideas.



Refocusing

Managing the scope and depth of your attention. Looking at different things, looking for different things, in different ways.

Alternating

Switching among or contrasting different activities or perspectives so as to create or relieve productive tension and make faster progress.

Alternating -- Polarities

Warming up vs. cruising vs. cooling down

Doing vs. describing

Doing vs. thinking

Careful vs. quick

Data gathering vs. data analysis

Working with the product vs. reading about the product

Working with the product vs. working with the developer

Product vs. project

Solo work vs. team effort

Your ideas vs. other peoples' ideas

Alternating -- More Polarities

Lab conditions vs. field conditions

Current version vs. old versions

Feature vs. feature

Requirement vs. requirement

Test design vs. execution

Coverage vs. oracles

Testing vs. touring

Individual tests vs. lab procedures and infrastructure

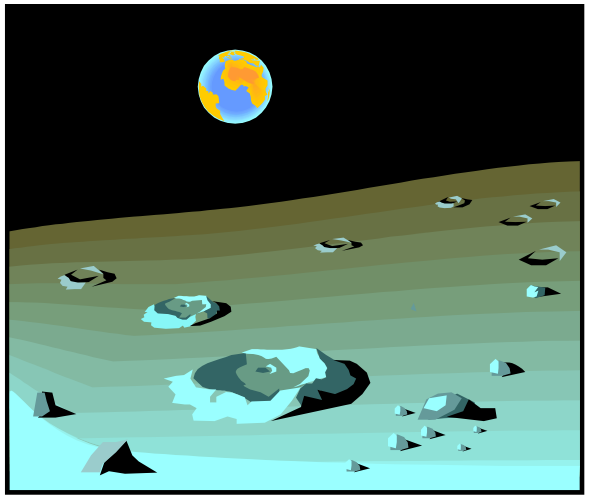
Testing vs. resting

Branching/Backtracking

Allowing yourself to be productively distracted from one course of action in order to explore an unanticipated new idea. Identifying opportunities and pursuing them without losing track of the process.

Conjecturing

Considering possibilities and probabilities. Considering multiple, incompatible explanations that account for the same facts.



Recording

Preserving information about your process, progress, and findings. Taking notes.

Reporting

Making a credible, professional report of your work to your clients in oral and written form.

Analogies

Psychologist

Driving a car

“20 Questions”

Sports

Bounty Hunter

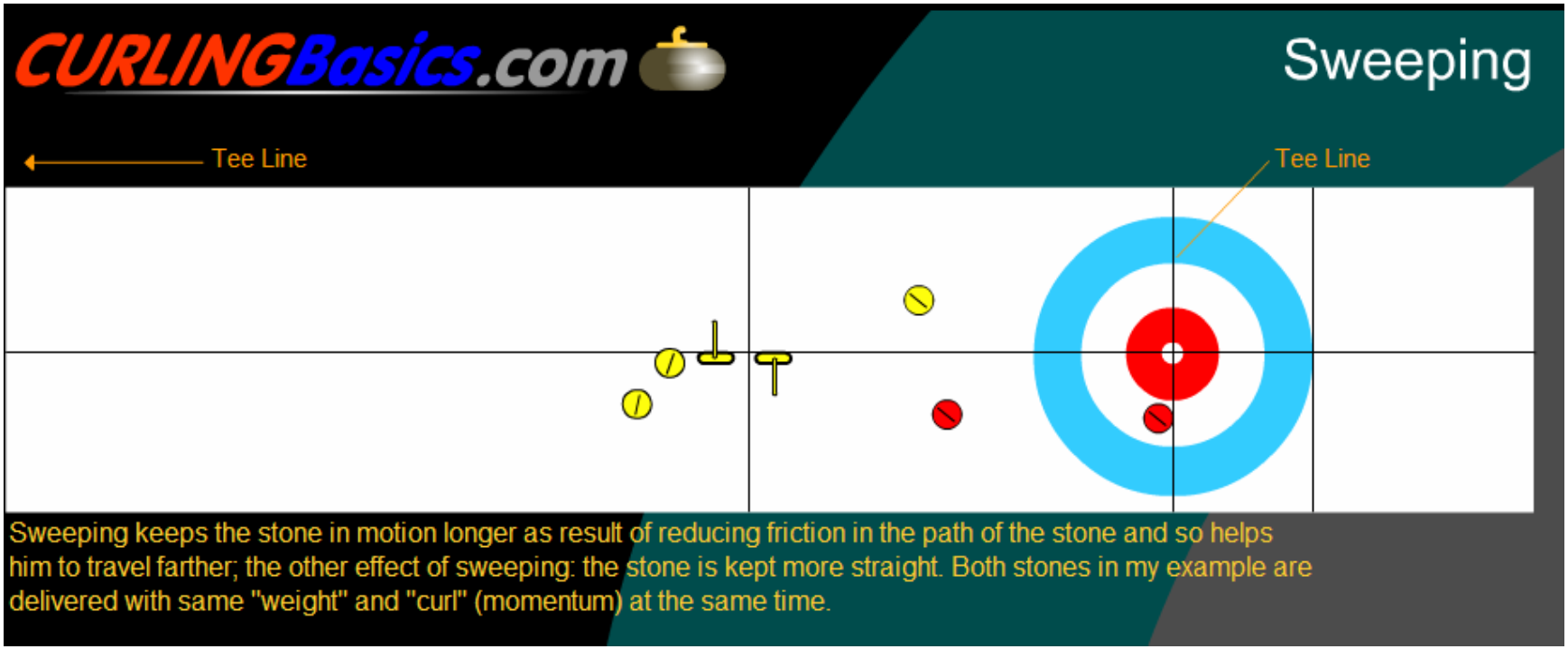
Going to a testing conference

Job Interview

Jam session

Newspaper reporter

Curling



Video http://www.nbcolympics.com/video/5120027/detail.html -- start from minute 2:19

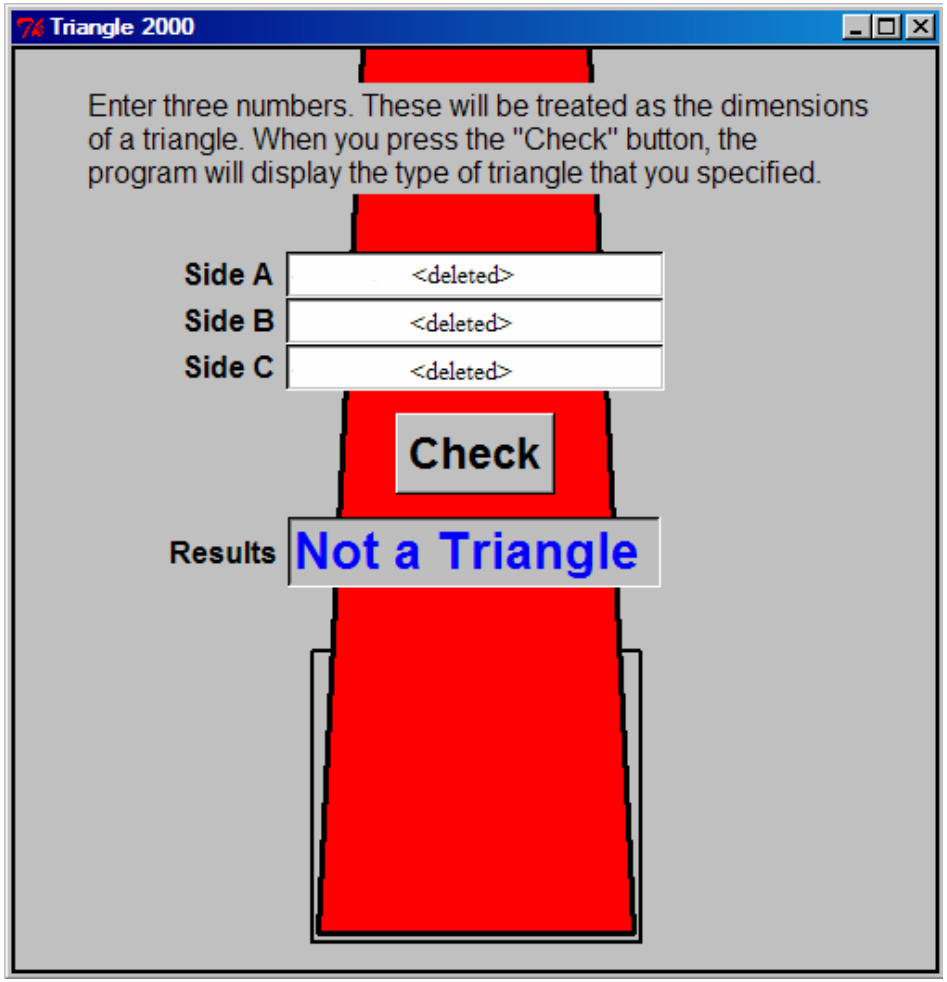
Stages of curling expertise?

Athlete: "…a person who has above average physical skills (strength, agility, and endurance) and is thus suitable for physical activities, in particular, contests. " -- wikipedia

Where I'm at so far in my curling expertise:

1) Know that there is something called "curling"
2) Watch it being done
3) Have some curiosity
4) Learn basic terminology
5) Try it
6) Realize that I could never be good at it
7) Get over that fear by practicing (developing skill)
8) Compete in the 2010 Olympics
9) Keynote at curling conferences
10) Move to Canada and become a commentator for CBC

ET in action: Repro this bug



Useful mental triggers

Test Plan Evaluation Model

Test Planning Checklist

Heuristic Test Strategy Model

Next steps

Where are you with exploratory testing “athleticism”?

1) Know that there is a sport called “exploratory testing”
2) Watch it being done
3) Have some curiosity
4) Learn / create definitions to describe your exploration
5) Ask critical questions about ET as an effective approach for you
6) Participate in discussion threads
7) Study others’ experiences
8) Borrow from others’ experiences
9) Write about your own experiences
10) Present your experiences (and inventions)
11) *Move to Canada and become a QA commentator for CBC*

Sources / More info

Context-Driven Software Testing
http://groups.yahoo.com/group/software-testing

Center for Software Testing Education and Research
http://www.testingeducation.org/BBST

Books related to Exploratory Testing skills and tactics
http://www.testingreflections.com/node/view/3190

Thanks to:

Julian DiMarco, Roy McMillion, the attendees at ExTRS (James Bach, Cem Kaner, Michael Bolton, James Lyndsay, Elisabeth Hendrickson, Jonathan Kohl, Scott Barber, Rob Sabourin, Mike Kelly)