Subject: Seb Rose

Bad test, Good Test

Maintainable

Test Builder Pattern

Understandable

Readability
Form of Docs
Within Domain

6 properties

Granular

Test one behaviour at a time

Repeatable

Independance
Isolated

Fast

Run many times, waste little time

Necessary

Provide value
Cost effective

```
(fresh [p1 a1 p2 a2 start end tod]
  (≡ {:times [[p1 a1 start end]
              [p2 a2 start end]]
      :tod tod}
     (-))
  (permitted?? p1 a1)
  (permitted?? p2 a2)
  (procedure-days-delay?? p2 14)
  (≡ "100" tod)
  (≠ a1 a2)

  (not-decreasing-dates?? start end)))
```

facts → relations queries

Logic style

Test data generation

Logic Programming
Test data generation

I am Brian Marick

Using clojure to generate test data from queries

Functional style embedded in general purpose langs

How to narrow down what to test : Zsolt Fabok

Instrument

Find code not executed

Find where execute numbers

Source code velocity

Data updates

Where will the code probably fail?

Static code analysis

No good tools. Try code reviews

boost

any

Variant

Still too complex for avg c++ prog

type-erasure

Facebook folly → optimised for Linux + gcc.

dynamic → restricted typeset
- good performance - design balance

Poco → C++ for humans

Dynamic::Var → multiplatform
- lower performance, but good enough for most.
- mostly transparent conv.

Dynamic C++

Aleksander Fabijanic

Phil Nash : CATCH

```
#define CATCH_CONFIG_MAIN
#include <catch.hpp>

TEST_CASE() {
    REQUIRE(1+2 == 3);
}
```

```
➜ ./myapp -s

TEST_CASE(
  "what this test does",
  "[tag][tag2]"
) { ... }
```

← tags only apply to test cases

http://build.catch-lib.net

Approx (3.141)

For floating point epsilons

Approx(3.141), epsilon(0.01)

```
TEST_CASE("with section"){
  SECTION("First section of test"){
    REQUIRE(1+2==3);
  }
  SECTION("Second section"){
    REQUIRE(2+3==5);
  }
}
```

REQUIRE ← Aborts on failure

CHECK ← Reports failure then carries on

i = 9
CAPTURE(i) } Provides contextual info

REQUIRE_NOTHROW
+ more

For testing exceptions

BDD style

```
SCENARIO( " ... " ) {
  GIVEN( " ... " ){
    WHEN( " ... " ) {
      → operations
      THEN( " ... " ) {
        → REQUIRE etc.
      }
      AND_WHEN( " ... " ){
        → operations
        THEN( " ... " ) {
          → REQUIRE etc.
}}}}
```

Budget

Team culture

Company Culture

Context

Skills

Customer culture

Preferences

Product

Time

What removes the mess, improves the situation

Set goals
Understand context
Choose practices
Inspect + Adapt

Giovanni Asdrubali

Agile a la Carte

Company culture → cloud of norms

Co-created

Creating a shared vision

Holacracy

Culture hacking

Commitments
Protocols

Imagine a picture of the future

Experiment

Iterate

What is our collective task?

active + intentional
+ - Iterative modification
of existing norms

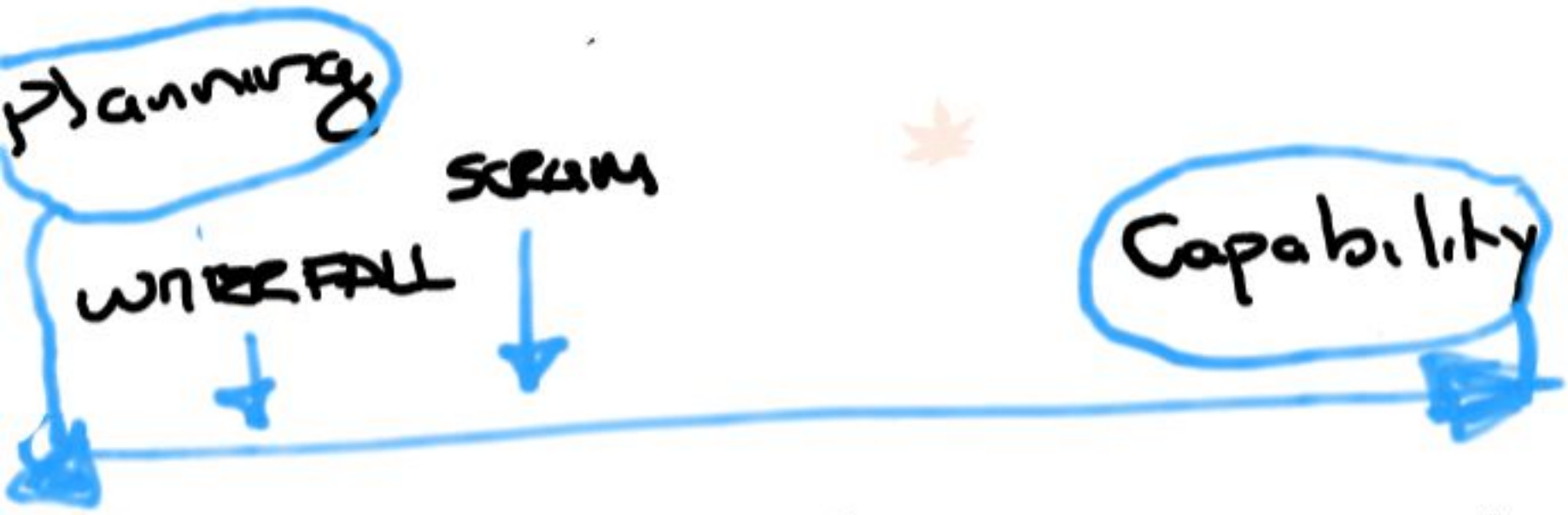
FOLLOW THE ENERGY

Dadi Ingólfsson

Visual Mgmt

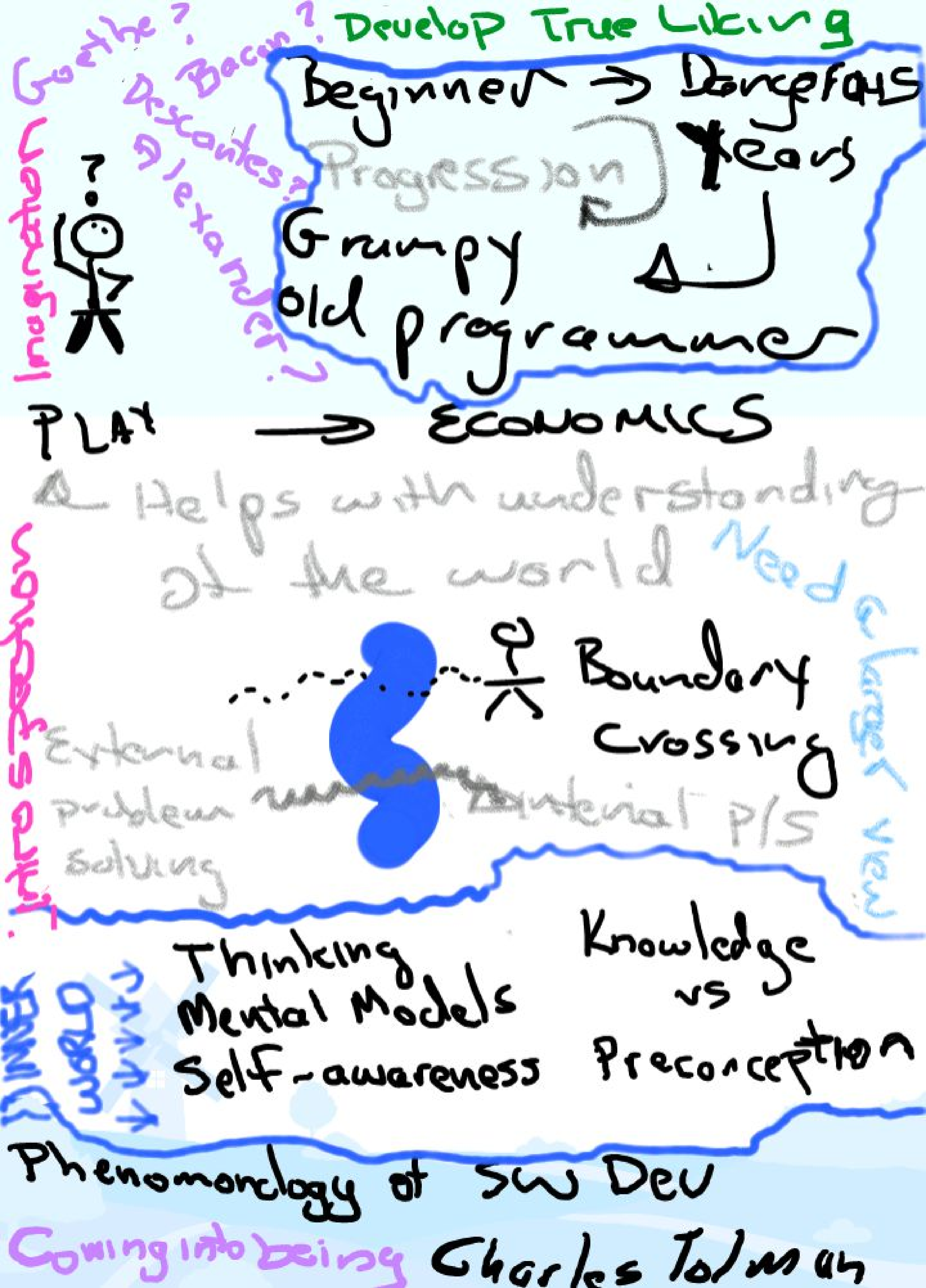
Planning ⇒ capabilities
Niklas Björnerstedt

To achieve more, do less



Networked environments
→ largely unplanngable
Complex environments

Most orgs should reduce reliance on planning



Develop True Liking
Goethe?
Bacon?
Descartes?
Alexander?
Imagination
Beginner → Dangerous Years
Progression
Grumpy old programmer
PLAY → ECONOMICS
Helps with understanding of the world
Need a larger view
Introspection
Boundary Crossing
External problem solving
Internal p/s
Thinking
Mental Models
Self-awareness
Knowledge vs Preconception
INNER WORLD
Phenomonology of SW Dev
Coming into being
Charles Tolman

Measure

Visualise

Pair Testing

Work with median to predict

cycle T
lead T
backlog
WP

Measure rejected work

Use data younger than 90 days

Be careful of optimising measurements

Code reviews reduced rejected work

Measure + Mng Flow in Practice

No +/-

+/- 90%

Arch is servant to

Stakeholder value

optimal

satisfies

requirements

multidimensional + clear

Business goals

Stakeholder goals

Clear constraints

identify

analyse

Evo: iterative deliver partial reqs

TOGAF is just boxes + balls

Good for startups too.

Engineering?

Pompous BS?

Real Arch!

Impact Estimation!

Well defined!

Cost of Arch?

Planguage

TOM GILB