

The Birth of Craftsmanship

Robert C. Martin
Object Mentor, Inc.



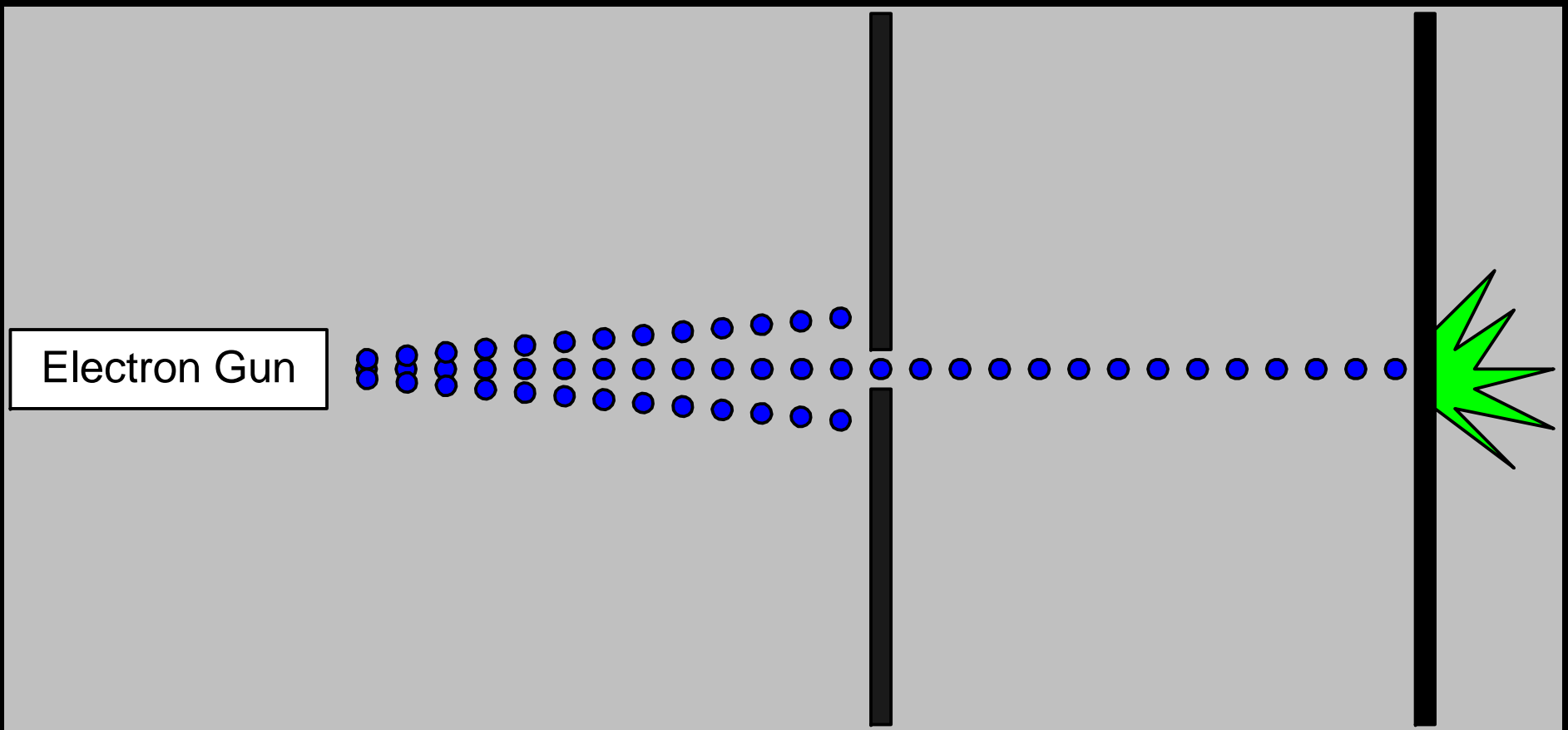
objectmentor.com

Copyright © 2008-9 by Object Mentor, Inc
All Rights Reserved

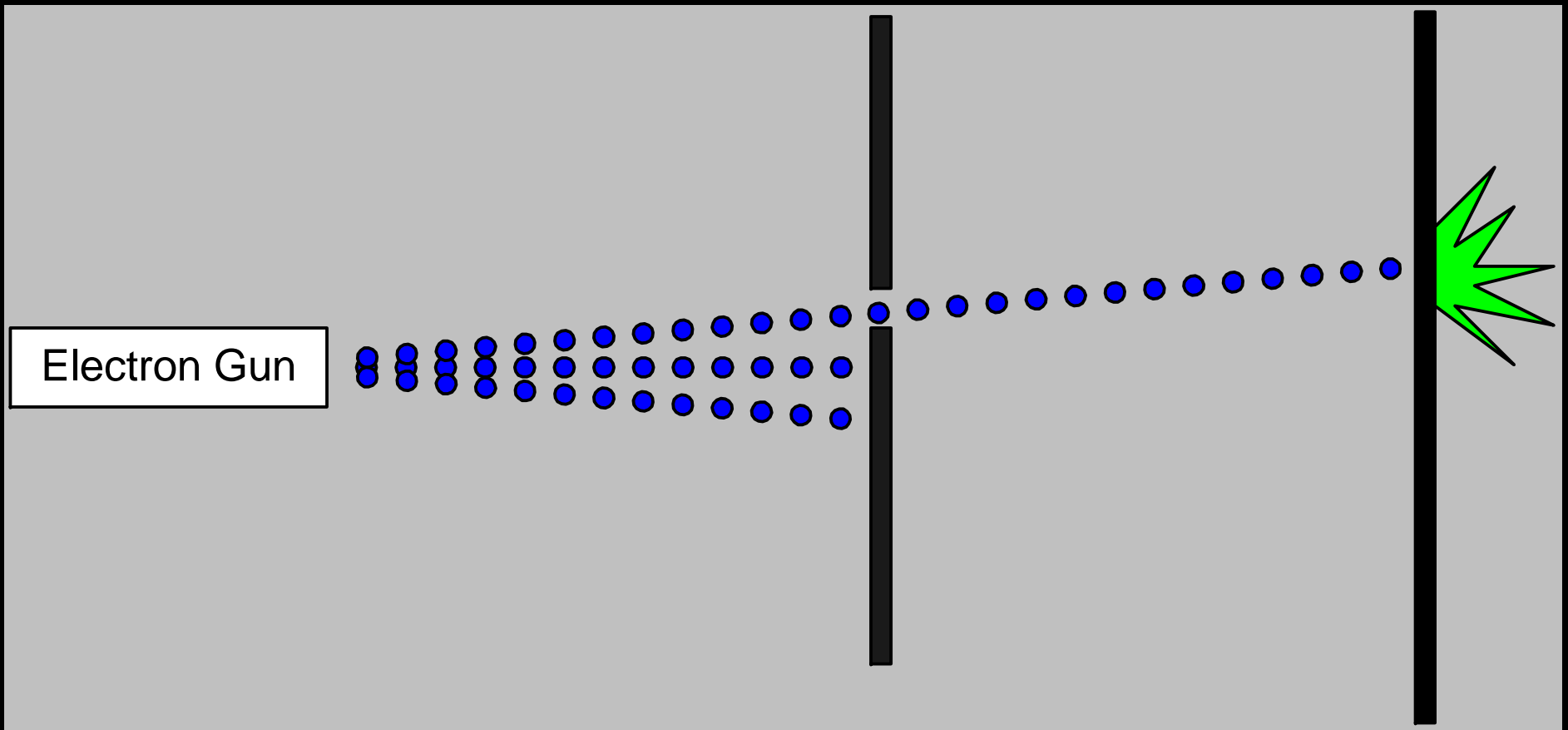
Our Craft:

*After years,
we have a
definition!*

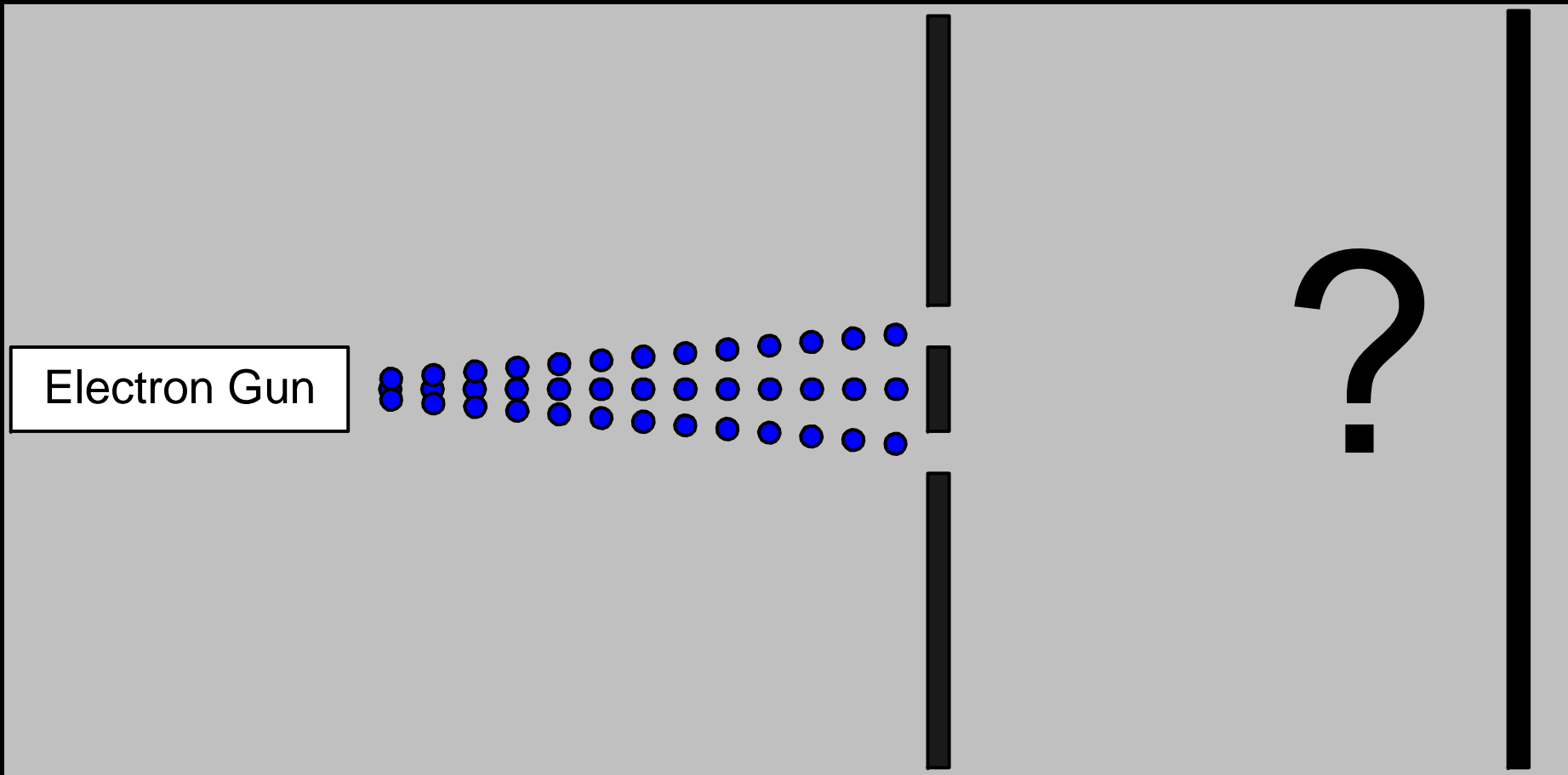
Electron Gun and Slit



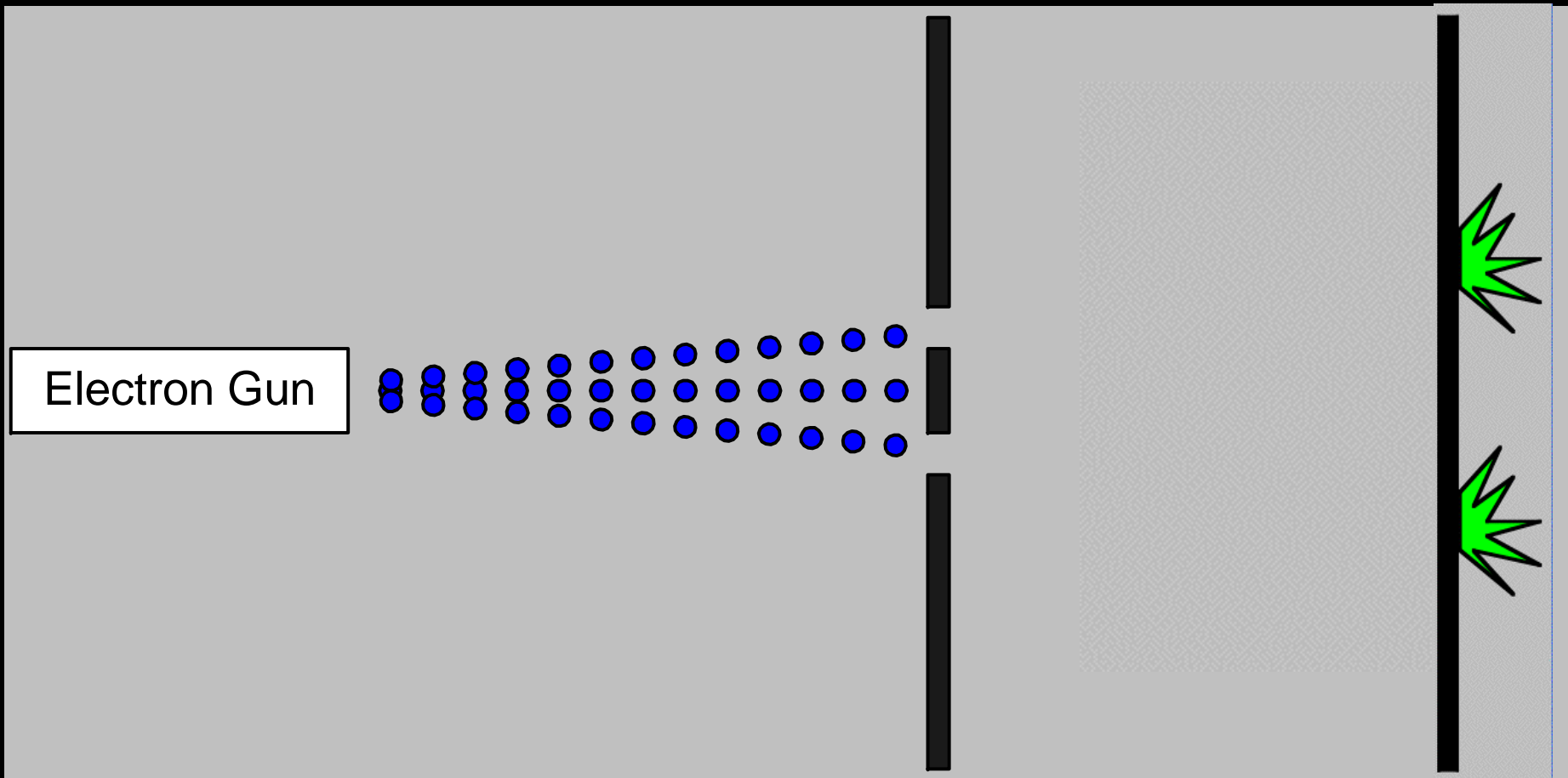
Moving the slit, moves the spot.



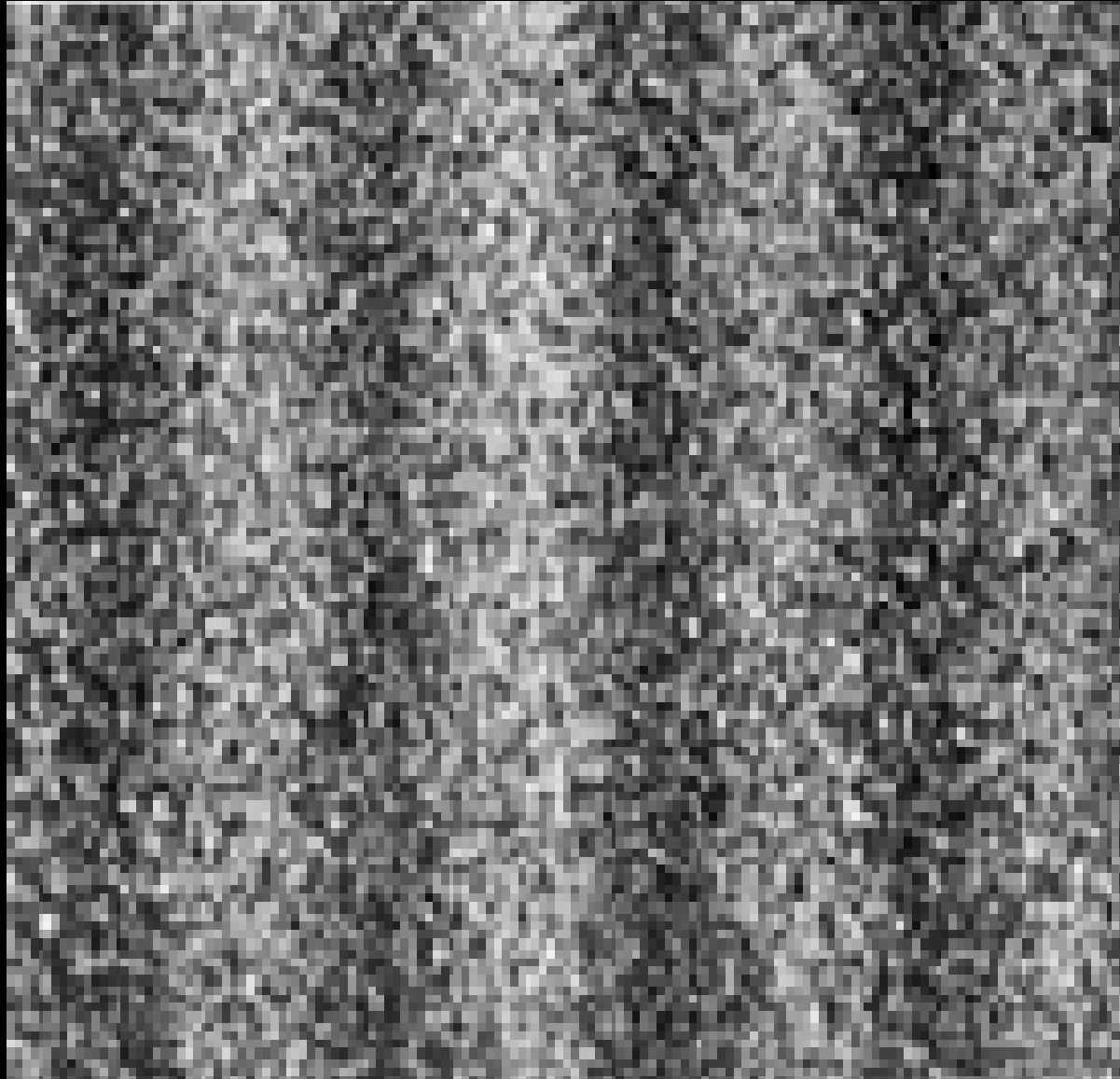
What would two slits show?



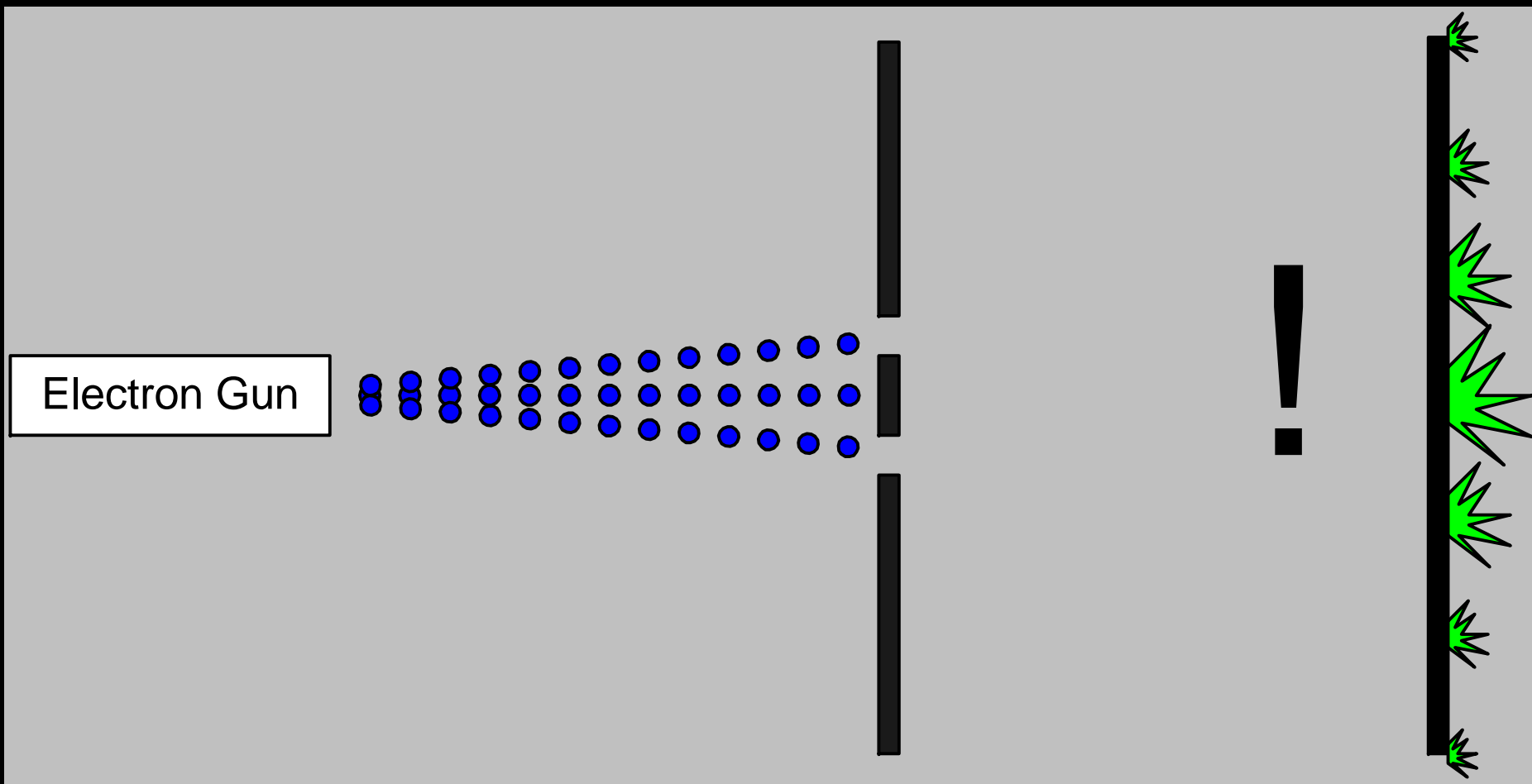
Two Spots?



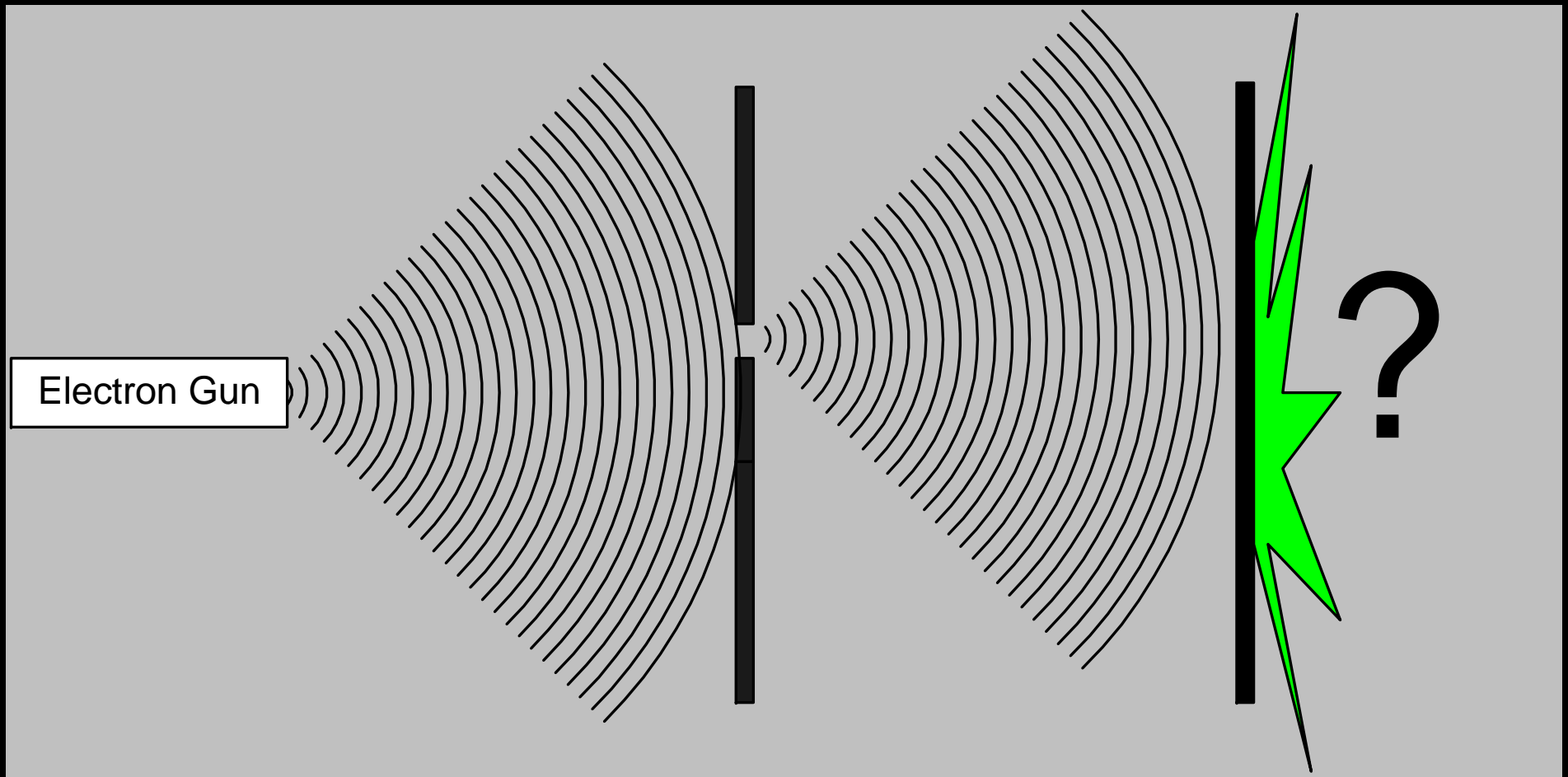
Yikes Stripes!



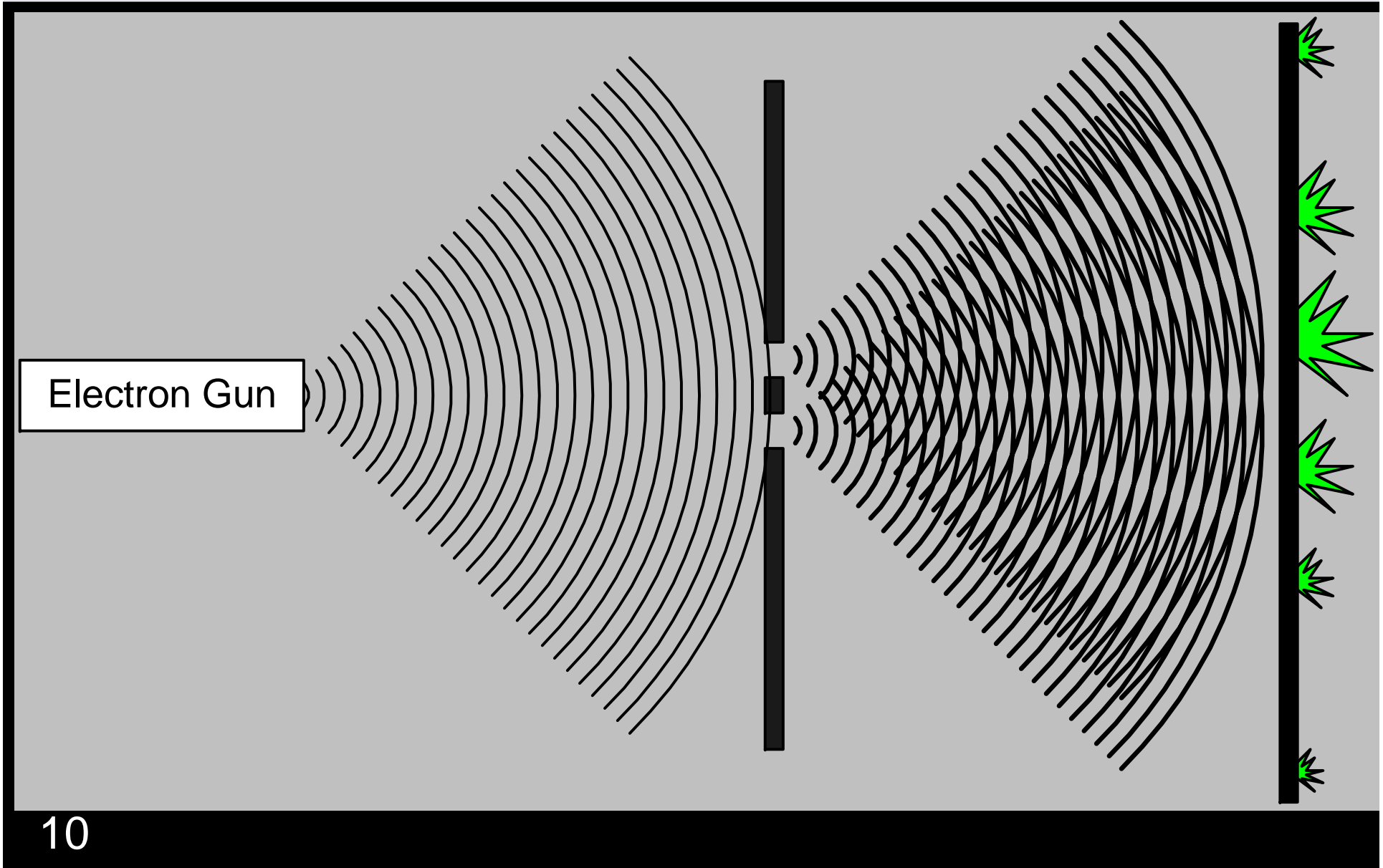
Yikes! Stripes!



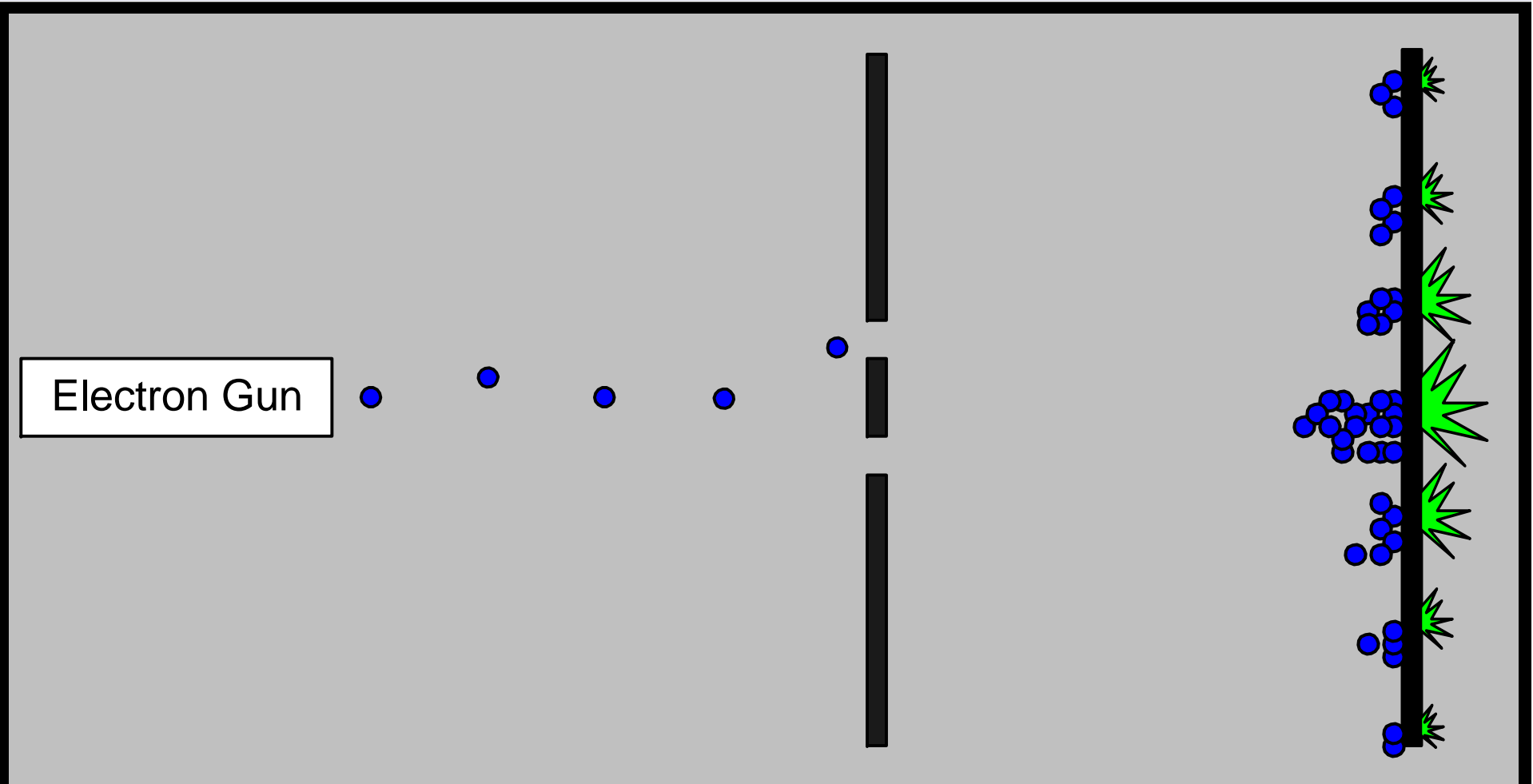
What if electrons are waves?



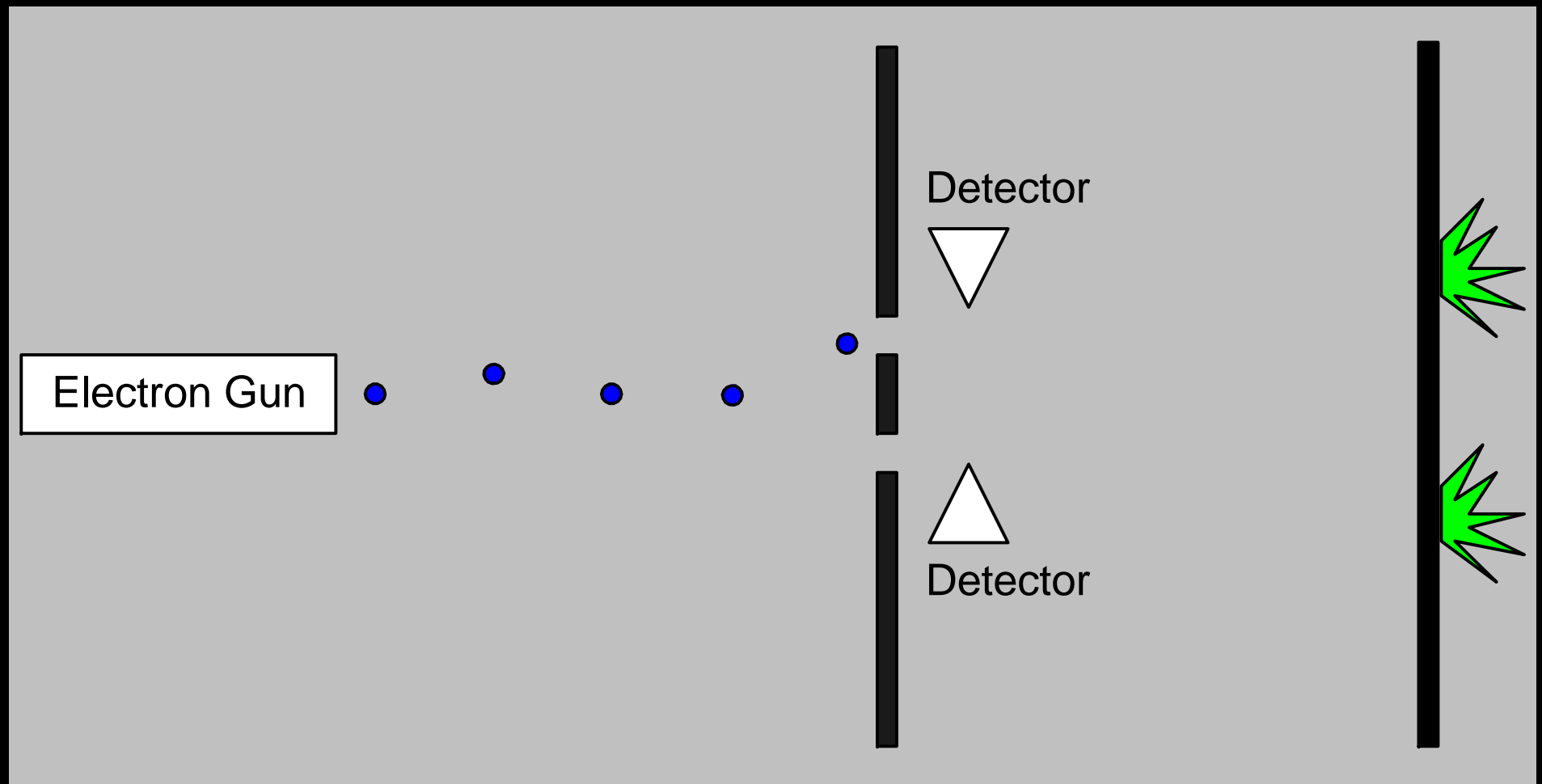
Then the waves would interfere.



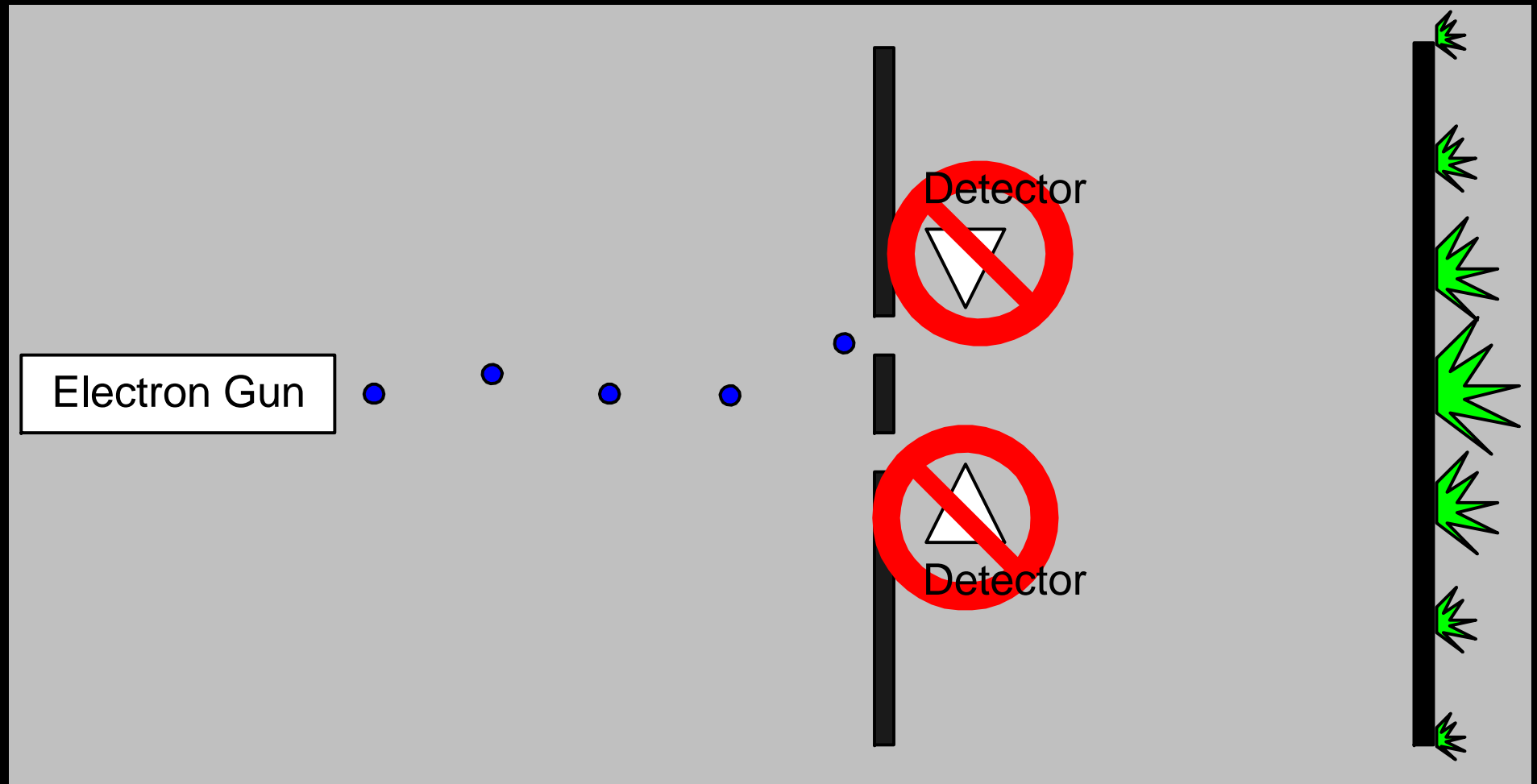
So let's shoot them one at a time.



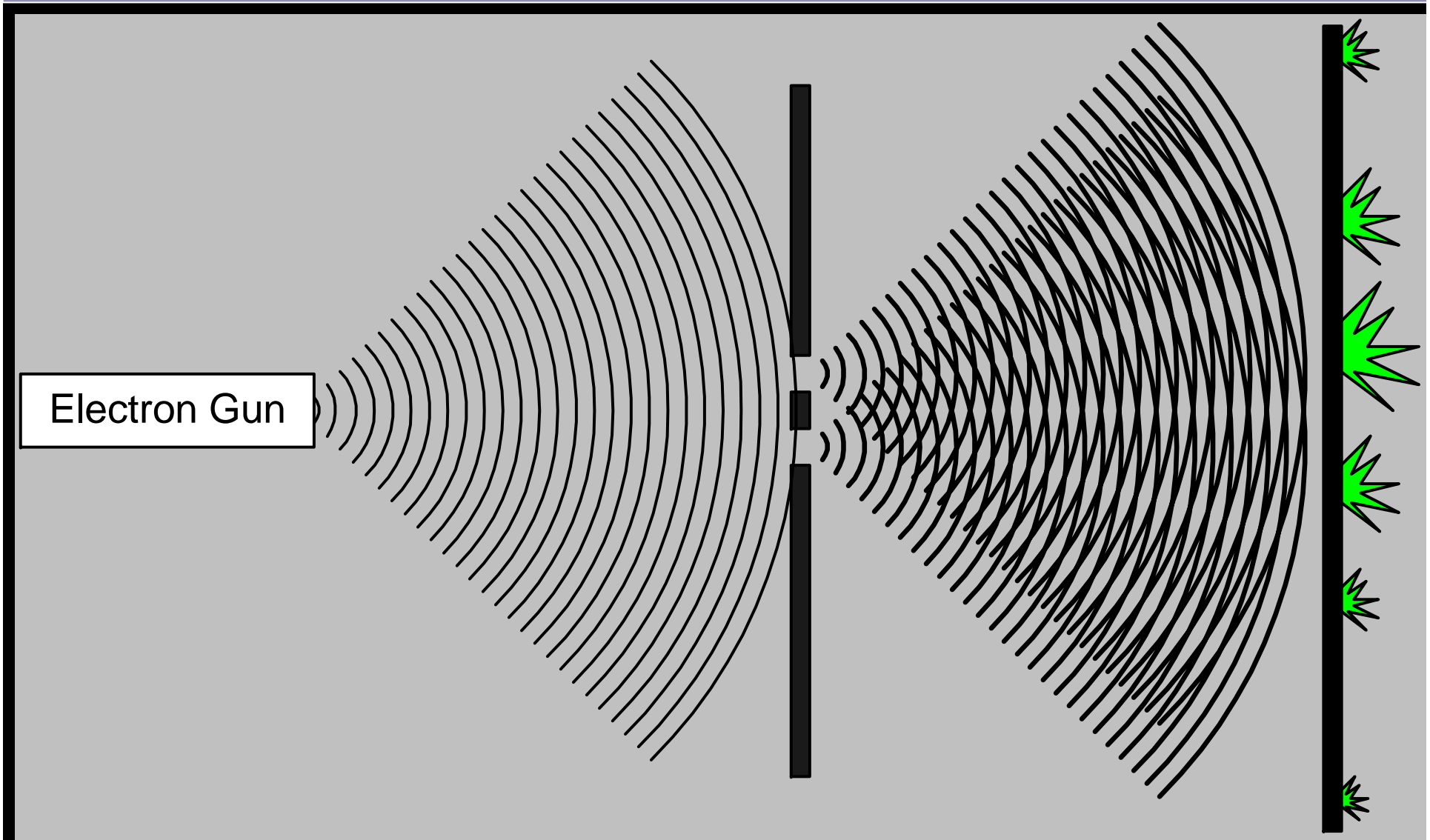
OK, let's watch the slits.



Detectors off. Pattern returns.

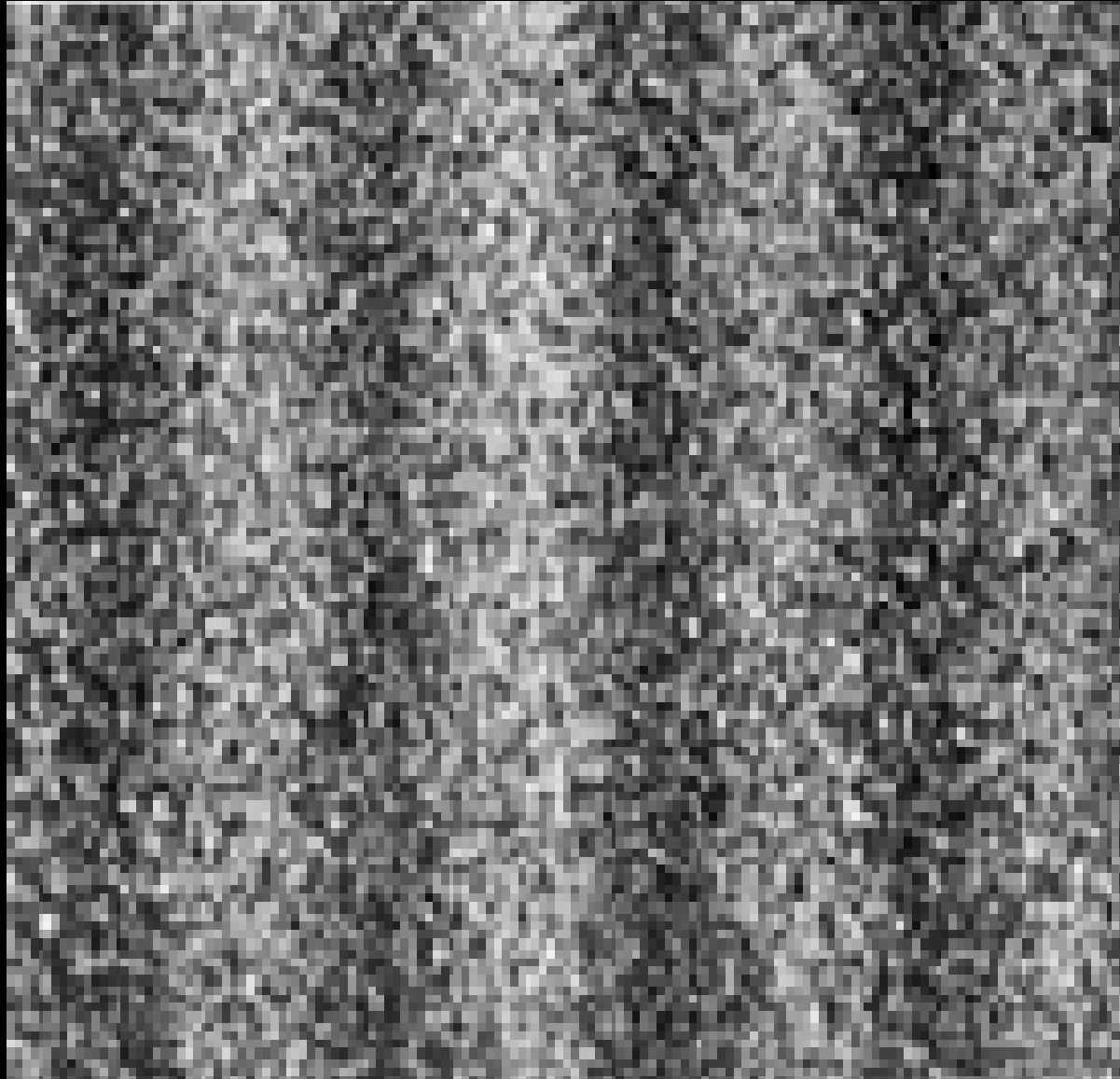


This is a picture of a single electron.



14 But only if we don't watch it pass through the slits.

This is 60,000 individual electrons.



What have we learned from this?

The world is not as it appears to our common sense notions.

or

If you think you understand QM, then you are missing something.

*But we're supposed to
be talking about our
Craft...*

*Prehistory:
The dark times.*

70's-90's

We *believed*
in big plans.



Object Mentor's Third Law of Agile Development

"In preparing for battle I have always found that plans are useless, but planning is indispensable. "

Dwight David Eisenhower

Booch's Common Sense Example

- The Doghouse vs. the Skyscraper.



And then there's this...



Object Mentor's First Law of Agile Development

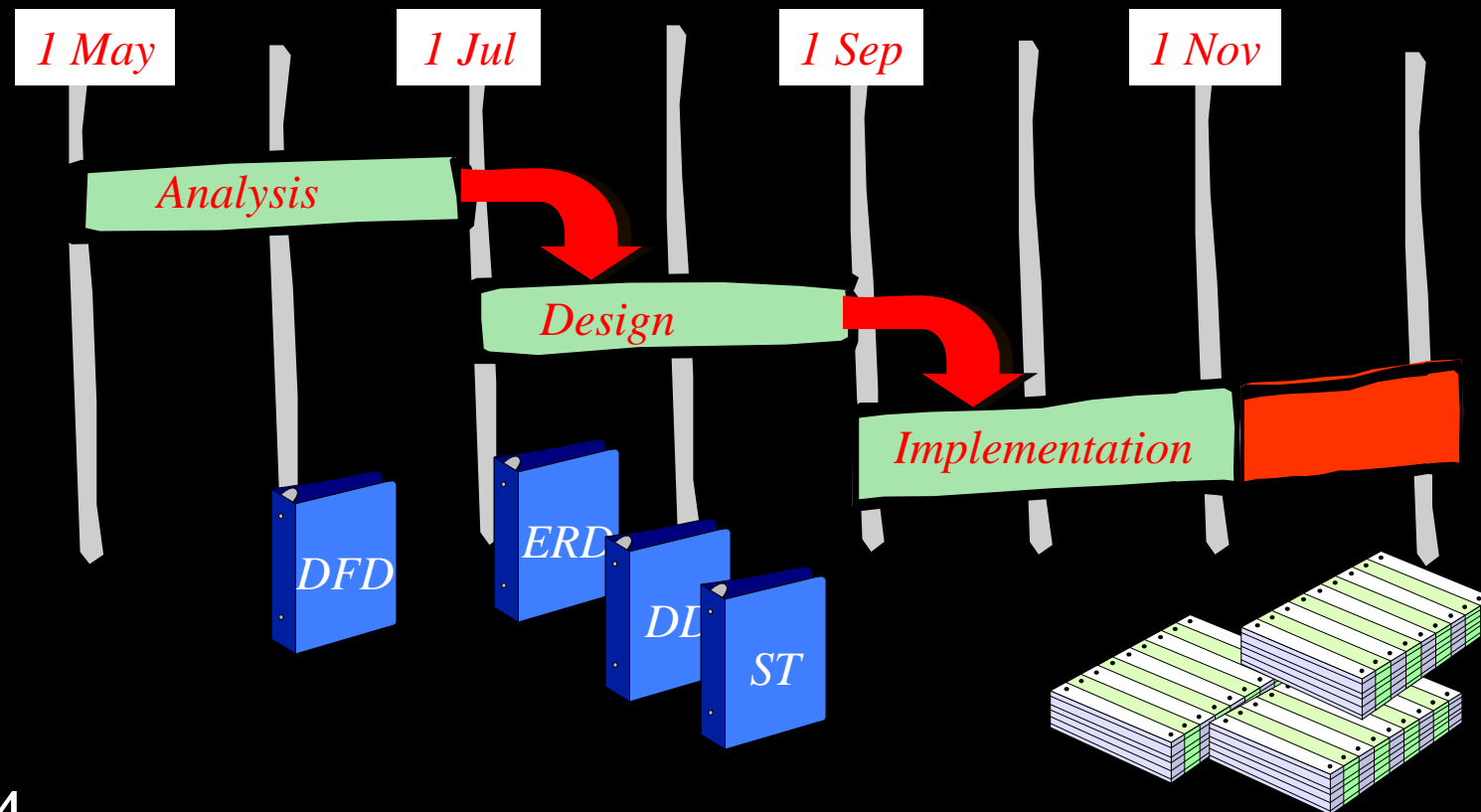
“A complex system that works is invariably found to have evolved from a simple system that worked.

A complex system designed from scratch never works and cannot be patched up to make it work. You have to start over, beginning with a working simple system.”

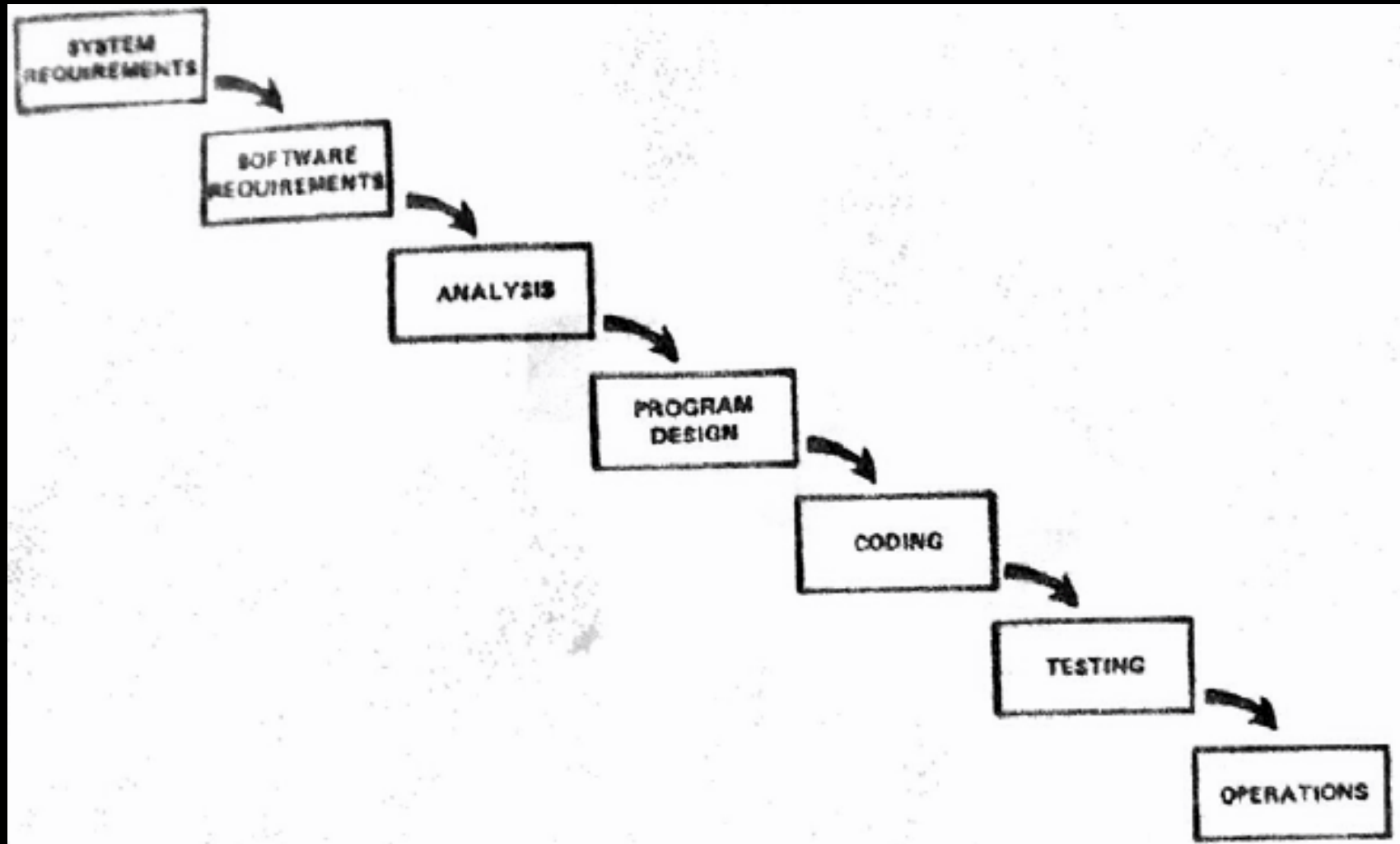
Systemantics: How Systems Really Work and How They Fail, 2d. ed., J. Gall, The General Systemantics Press, 1986, p. 65

The Waterfall Model

- Managing the Development of Large Software Systems
 - Dr. Winston W. Royce — 1970



Royce's actual diagram.



Royce's Observation

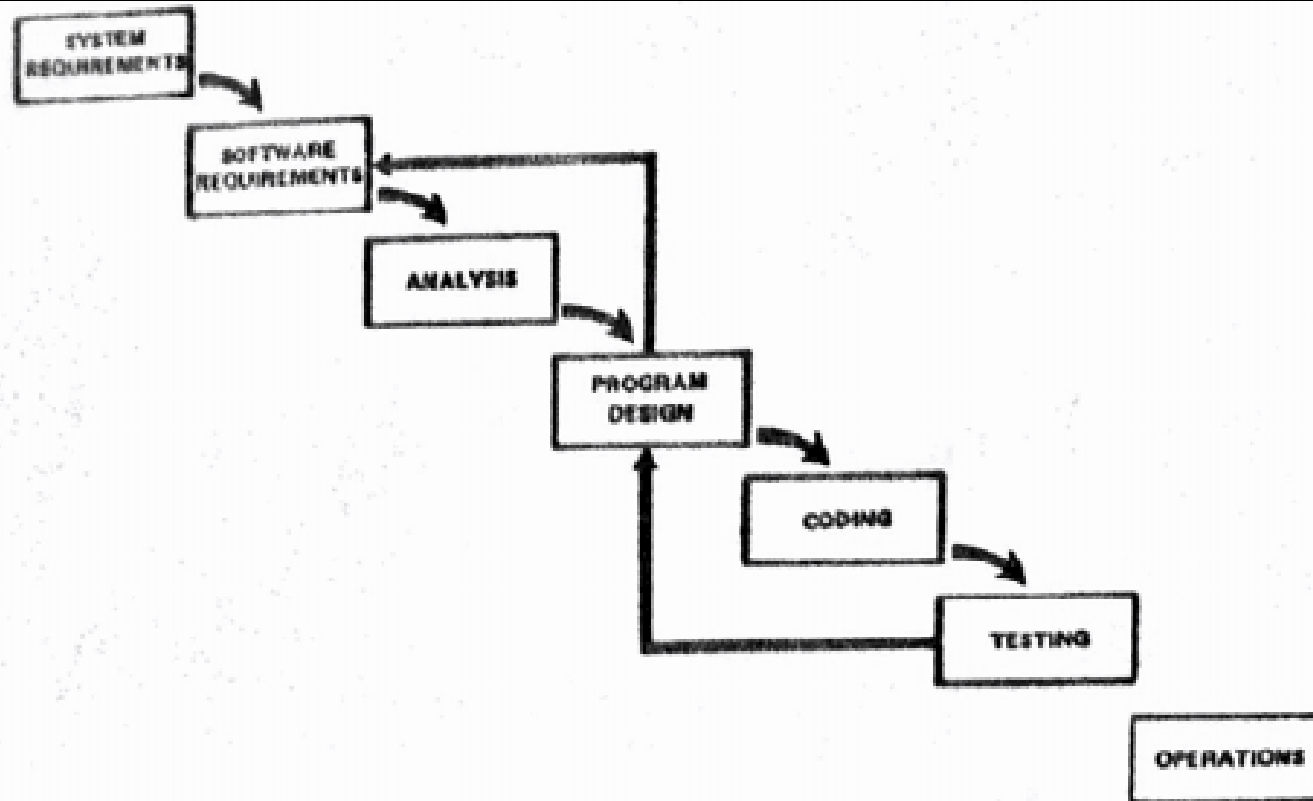
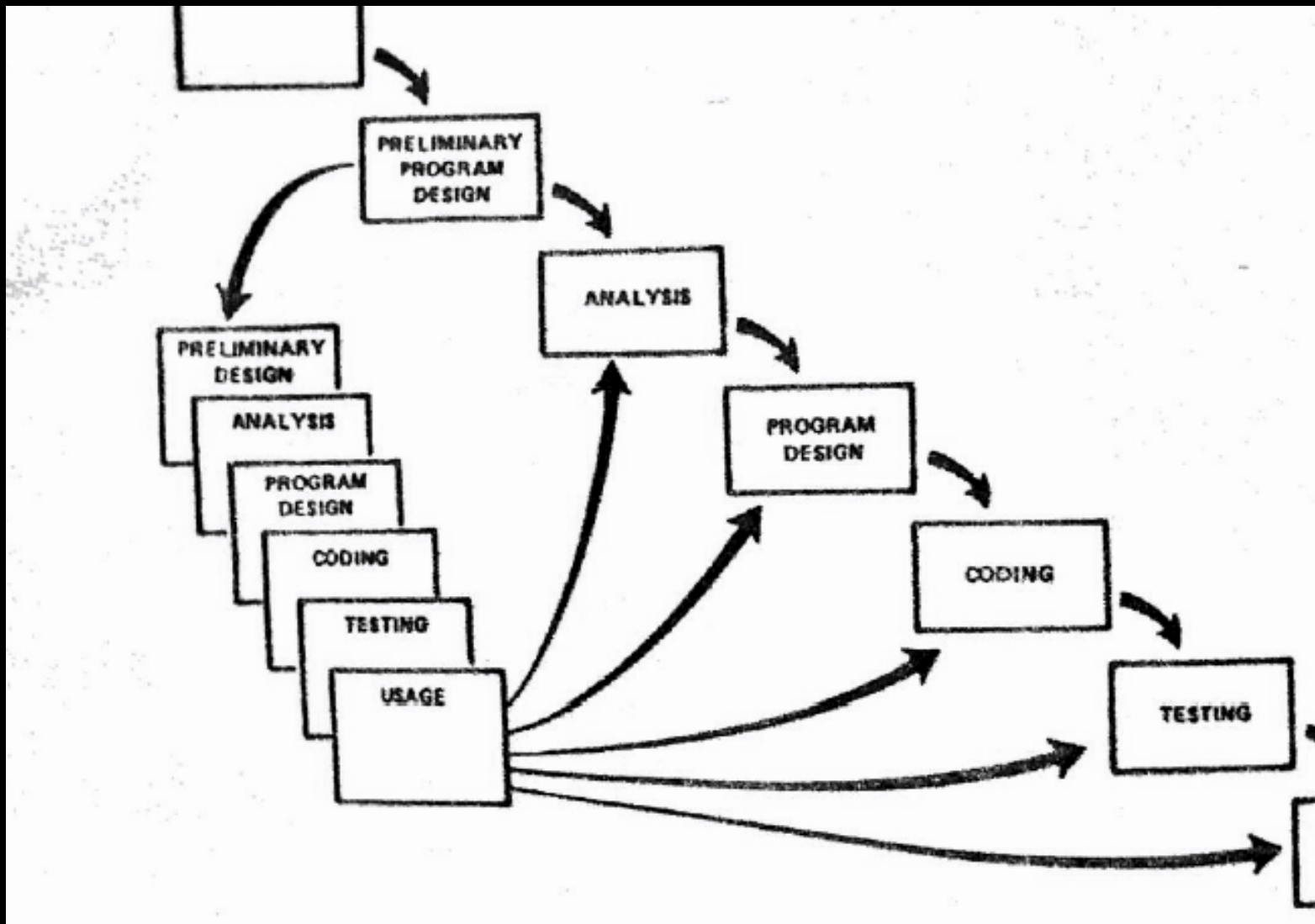


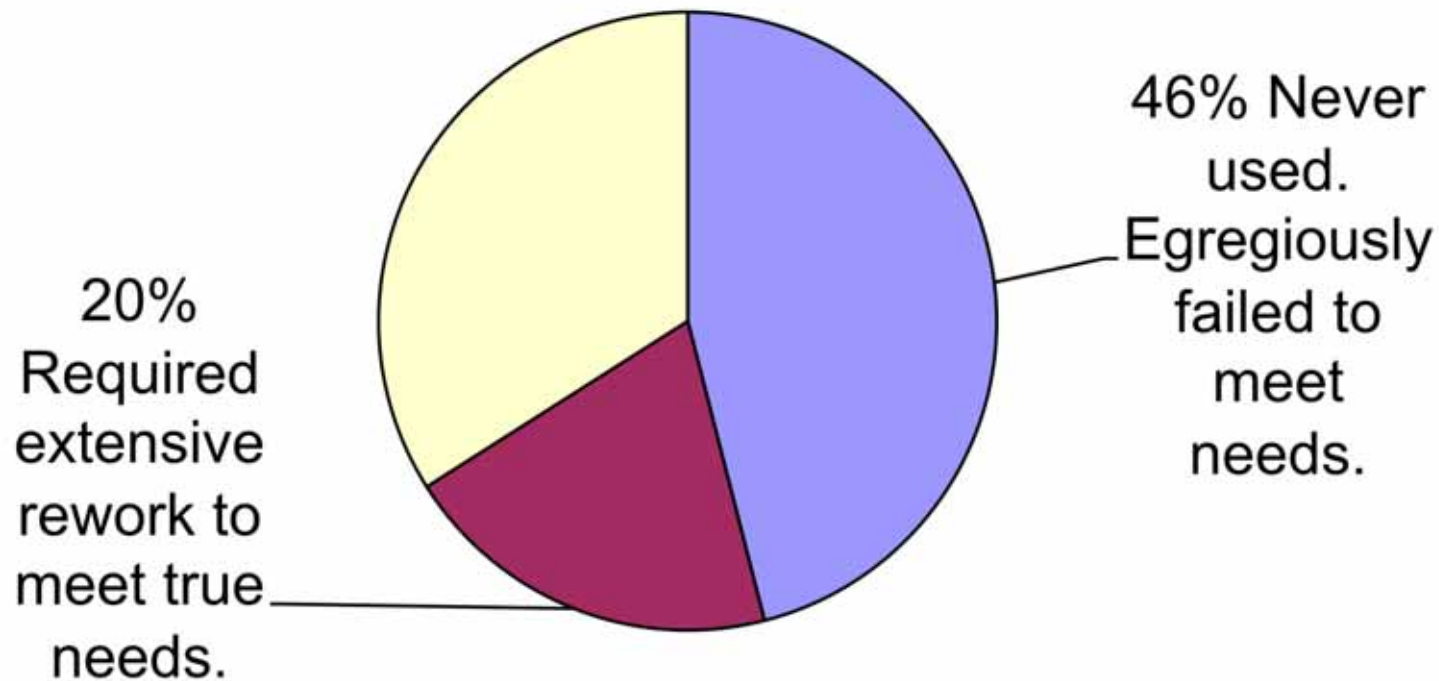
Figure 4. Unfortunately, for the process illustrated, the design iterations are never confined to the successive steps.

Royce's Conclusion

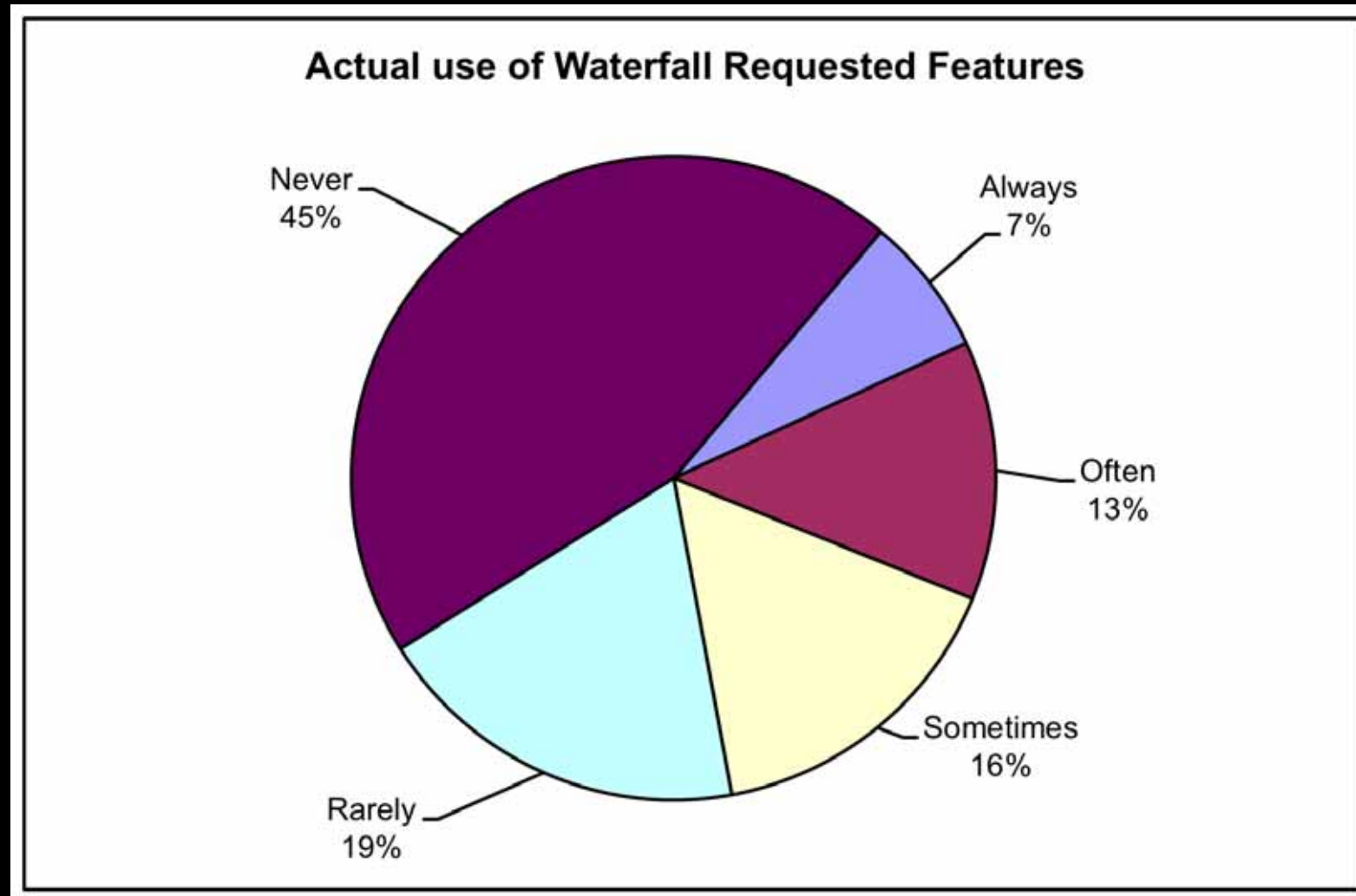


But the data says something different

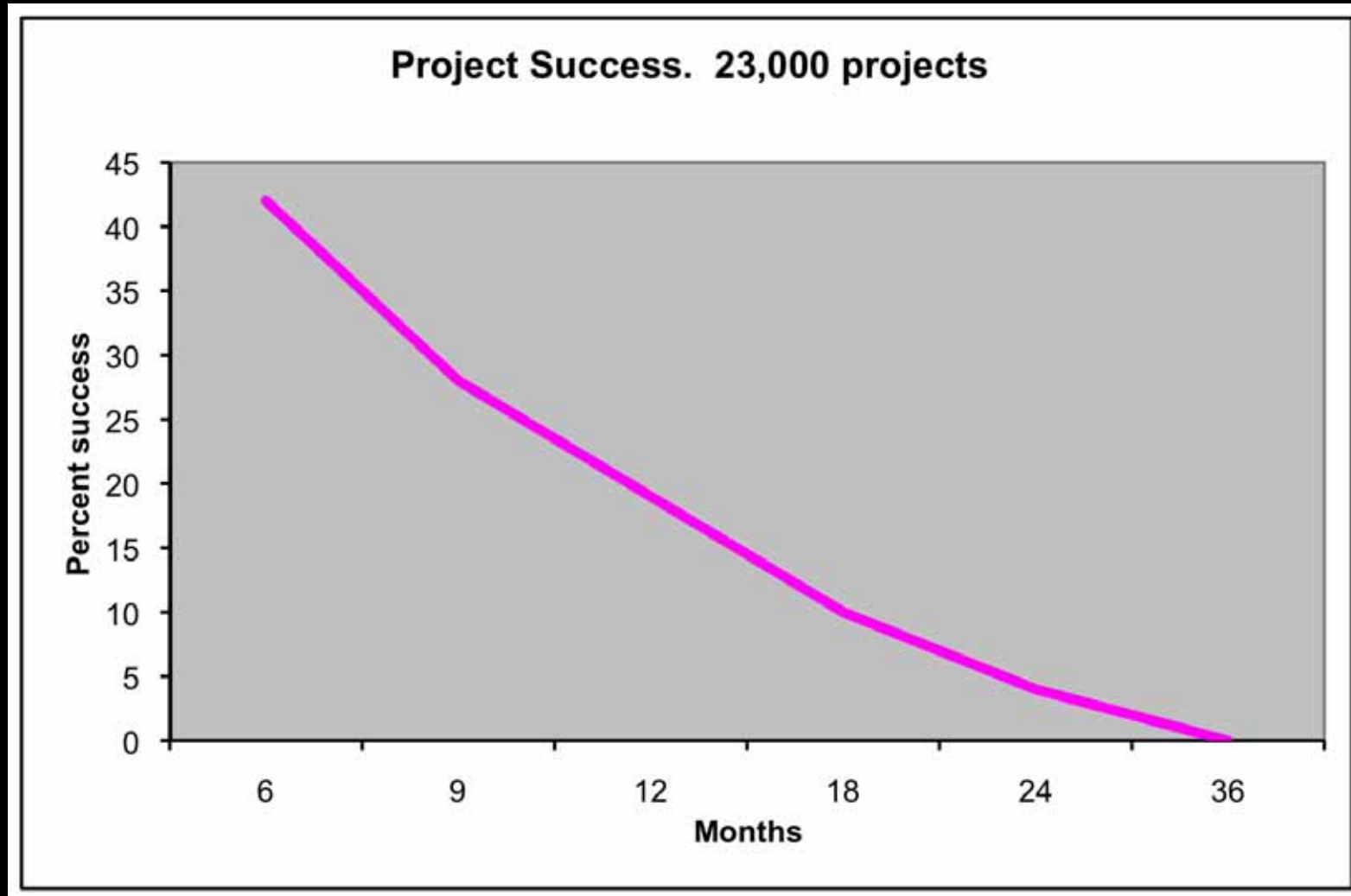
\$37B worth of DoD projects using 2167A



Over specification.



Long Projects Fail.



Object Mentor's Second Law of Agile Development

" ...the document-driven, specify-then-build approach... lies at the heart of so many... software problems."

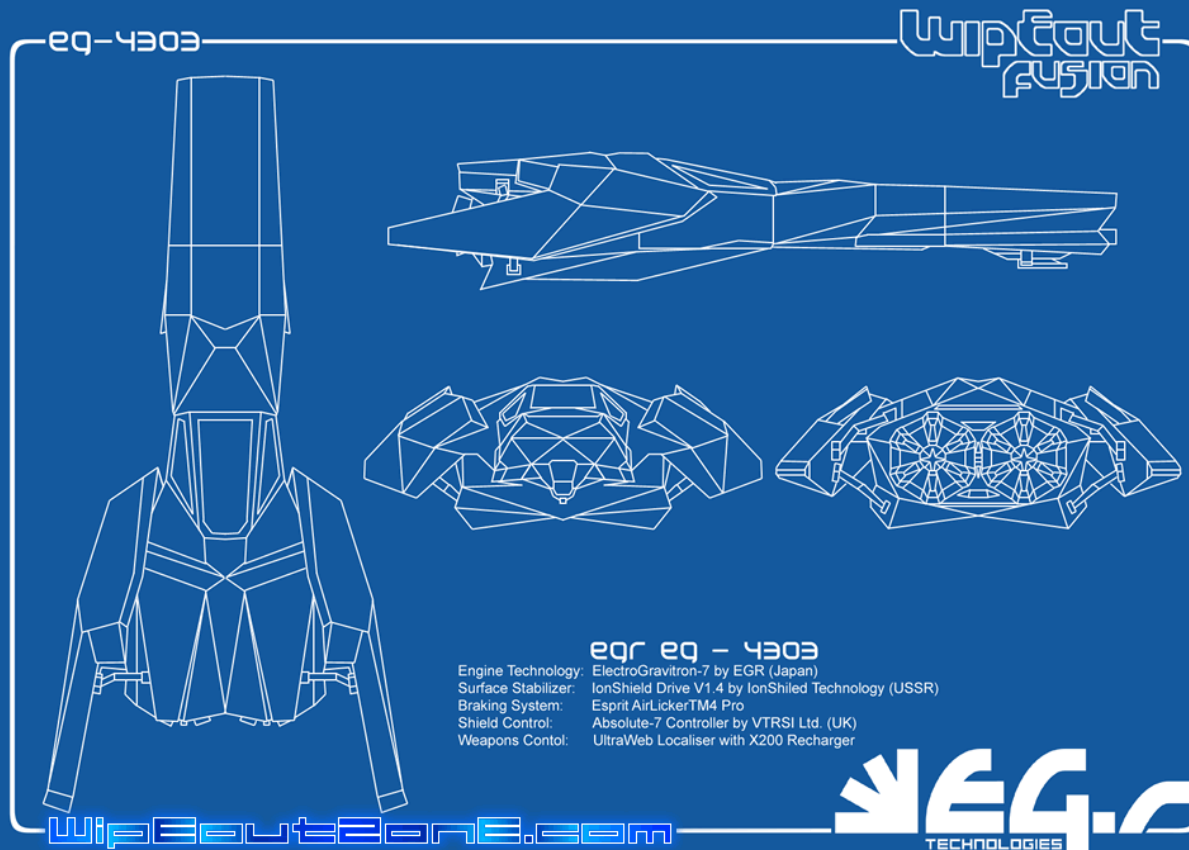
*Fred Brooks
in his 1987 Report of the Defense Science Board Task Force
on Military Software*

*1992: Jack Reeves
C++ Journal*

*“What is Software
Design?”*

Blueprints and Source code.

Jack Reeve's article:



```
public int score() {  
    int score = 0;  
    int frameIndex = 0;  
    for (int frame = 0; f  
        if (isStrike(frameI  
            score += 10 + str  
            frameIndex++;  
        } else if (isSpare(  
            score += 10 + spa  
            frameIndex += 2;  
        } else {  
            score += sumOfBal  
            frameIndex += 2;  
        }  
    }  
    return score;  
}
```

What if houses were like software?

- Construction costs *nothing*.
- Design is everything.
- Every design change costs \$100.



*1995:
Principles
&
Patterns*

SCRUM
1995 PLoP

~muddle~

Space: 1999

XP

Short Iterations

TDD

Refactoring

Simple Design

Continuous Integration

Pairing

Excitement:
The Techie Practices

Revulsion:

*No Architecture!
No Design!*

1999: XP Immersion

XP Leadership

Hillside Burnout.

The Two Martins.

*Lightweight
Process
Summit*

Snowbird Agile Manifesto

“Agile” Coined

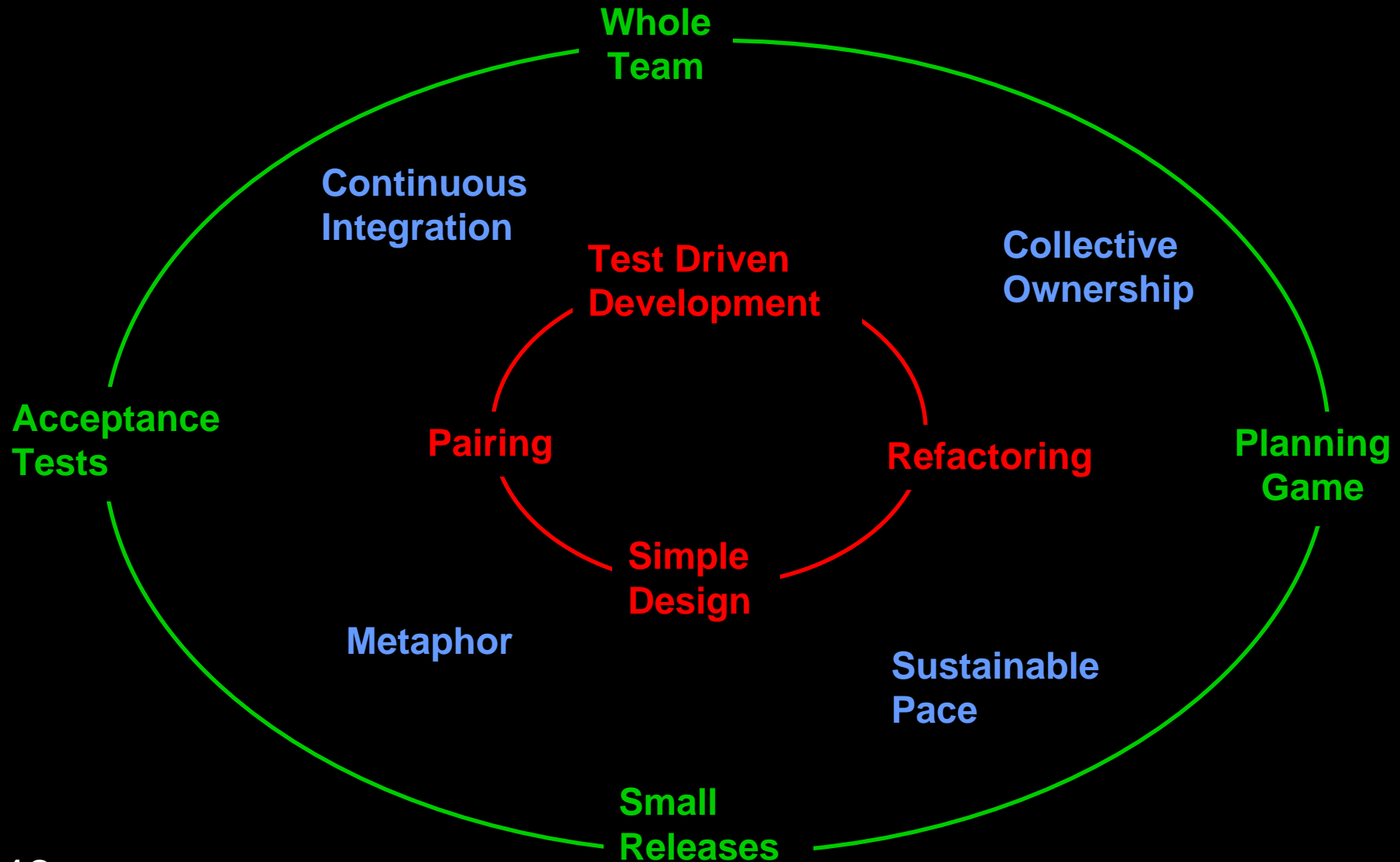
*Most important
Most damaging*

XP
Scrum
FDD
DSDM
XTAL

Agile *Stimulated*
SCRUM

Scrum subset of XP

Ron's Circle of Life



SCRUM doesn't smell
like
GEEKS

*SCRUM makes Agile
palatable to Business.*

2002: CSM #1

meh.

*SCRUM certification
gold rush*

*Attracted Business
attention.*

*But...
Agile, Scrum, XP
were for:*

Small teams.

RIP: SOS

Aunt Mary.

LEAN

Agile in the Large.

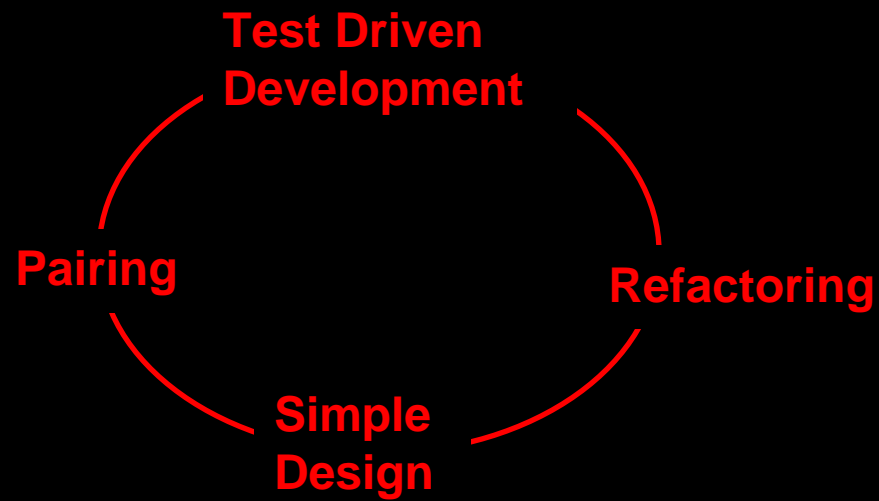
Engorged SCRUM

SCRUM Certification & Lean

*Scrum crossed
the Chasm and
penetrated
business.*

*But something was
left behind...*

Tech Practices!



Flaccid

Scrum

*It's the worst case
scenario:*

*No Design.
No Architecture.*

Just Rapid Churn.

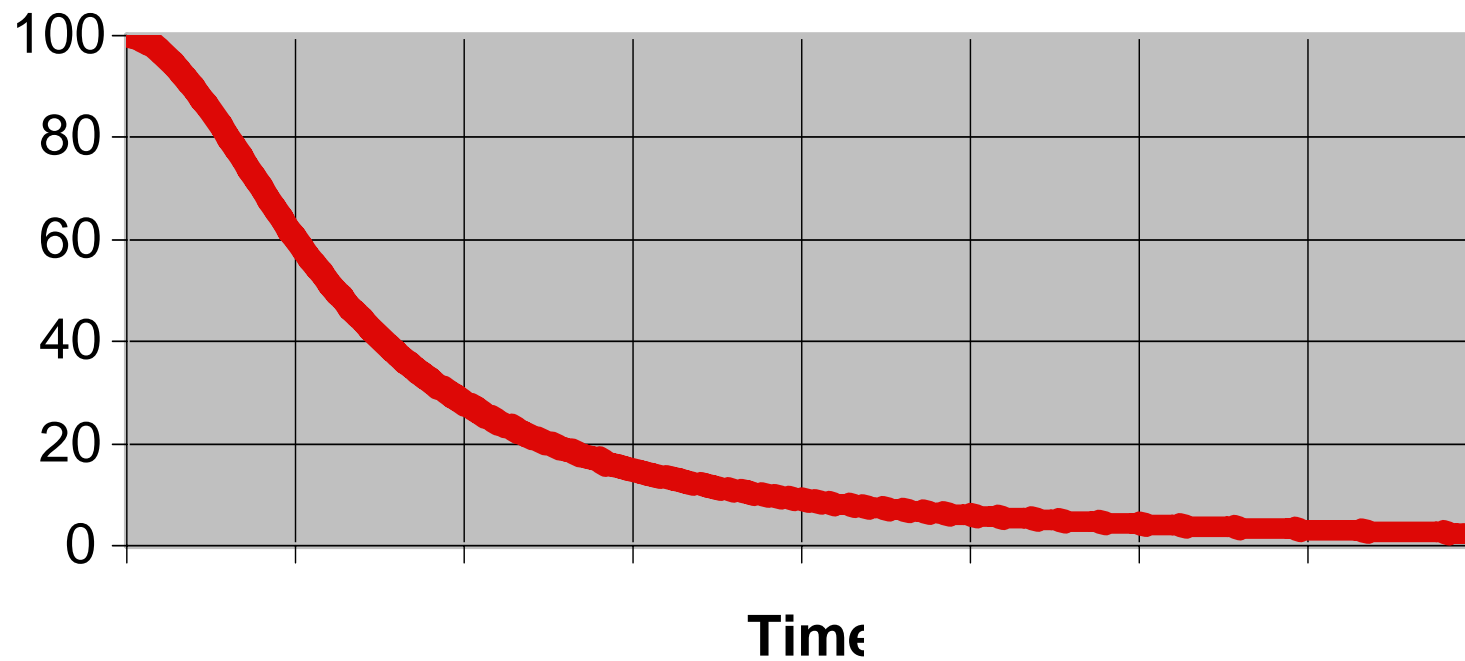
*How many of you
have been
significantly impeded
by **Bad Code**.*

*To make matters
worse*

*The mess doesn't
show up right away.*

The Flaccidity Curve

Productivity vs T_i



*Seeming fast
is not
BEING fast.*

Scrum-ED:

Agile->Stimulated,
Lean->Engorged,

No tech->Flaccidated.

*But Agile
Exposes
this problem so that
the Business can see
it!*

*Because velocity is
measured and
reported*



*To improve velocity
Scrum Teams
must adopt
TDD, CI, Pairing,
simple design,
refactoring.
(XP)*

*Agile is the gateway
To Craftsmanship
To a Profession*

*Craftsmanship:
Professionalism:*

The Next Big Thing™

TDD / Refactoring

Clean Code

Boyscout Rule.

*The only way
to go fast....*

...is to go well,

and to write....

Code This Good.



The Green Band

www.cleancodeproject.com



Craftsmanship Manifesto

manifesto.softwarecraftsmanship.org

Contact Information

- Robert C. Martin
unclebob@objectmentor.com
- Websites:
www.objectmentor.com
www.cleancodeproject.com
manifesto.softwarecraftsmanship.org