

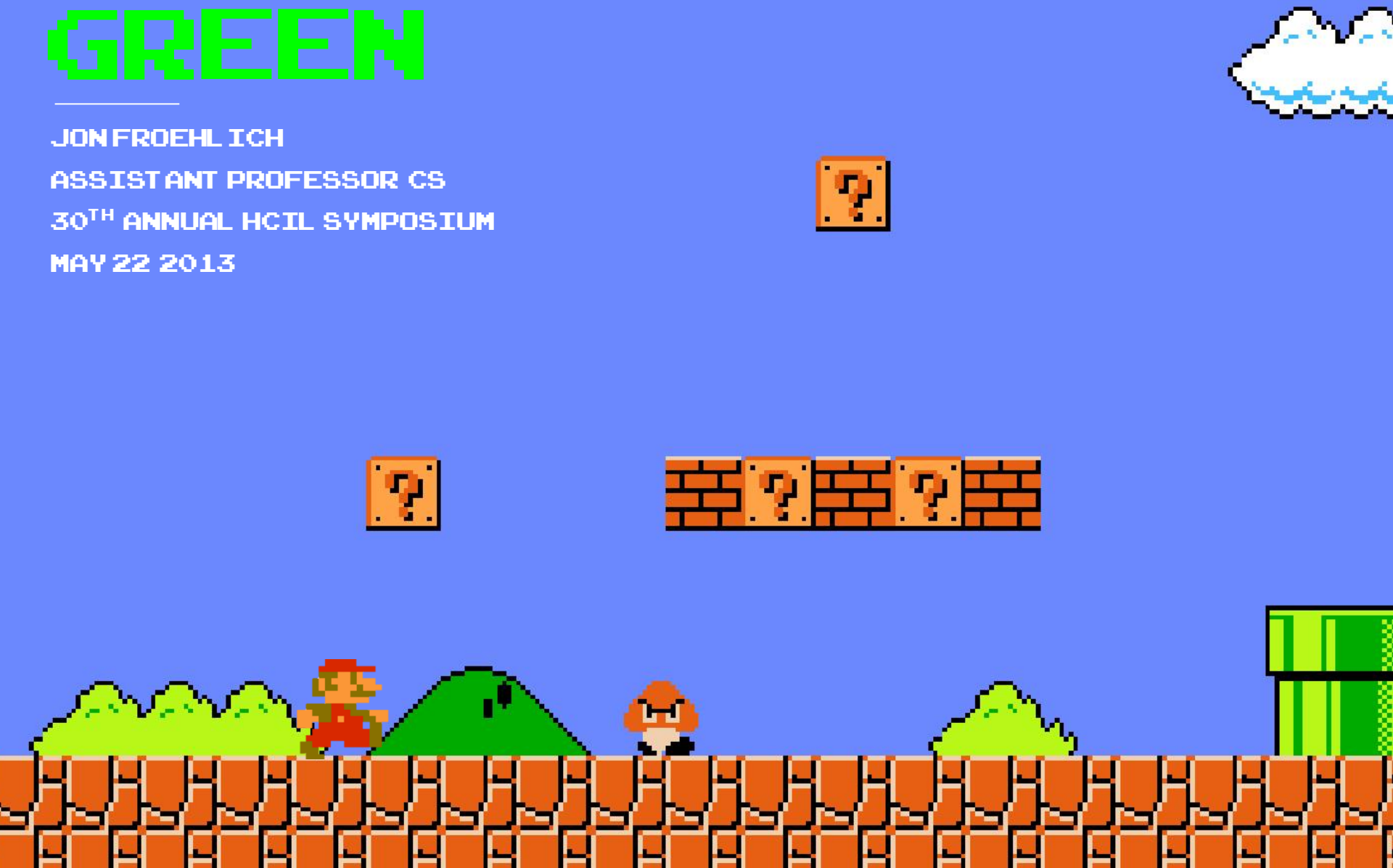
GAMIFYING GREEN

JON FROEHLICH

ASSISTANT PROFESSOR CS

30TH ANNUAL HCIL SYMPOSIUM

MAY 22 2013





Authentic
Hockey Mullet!



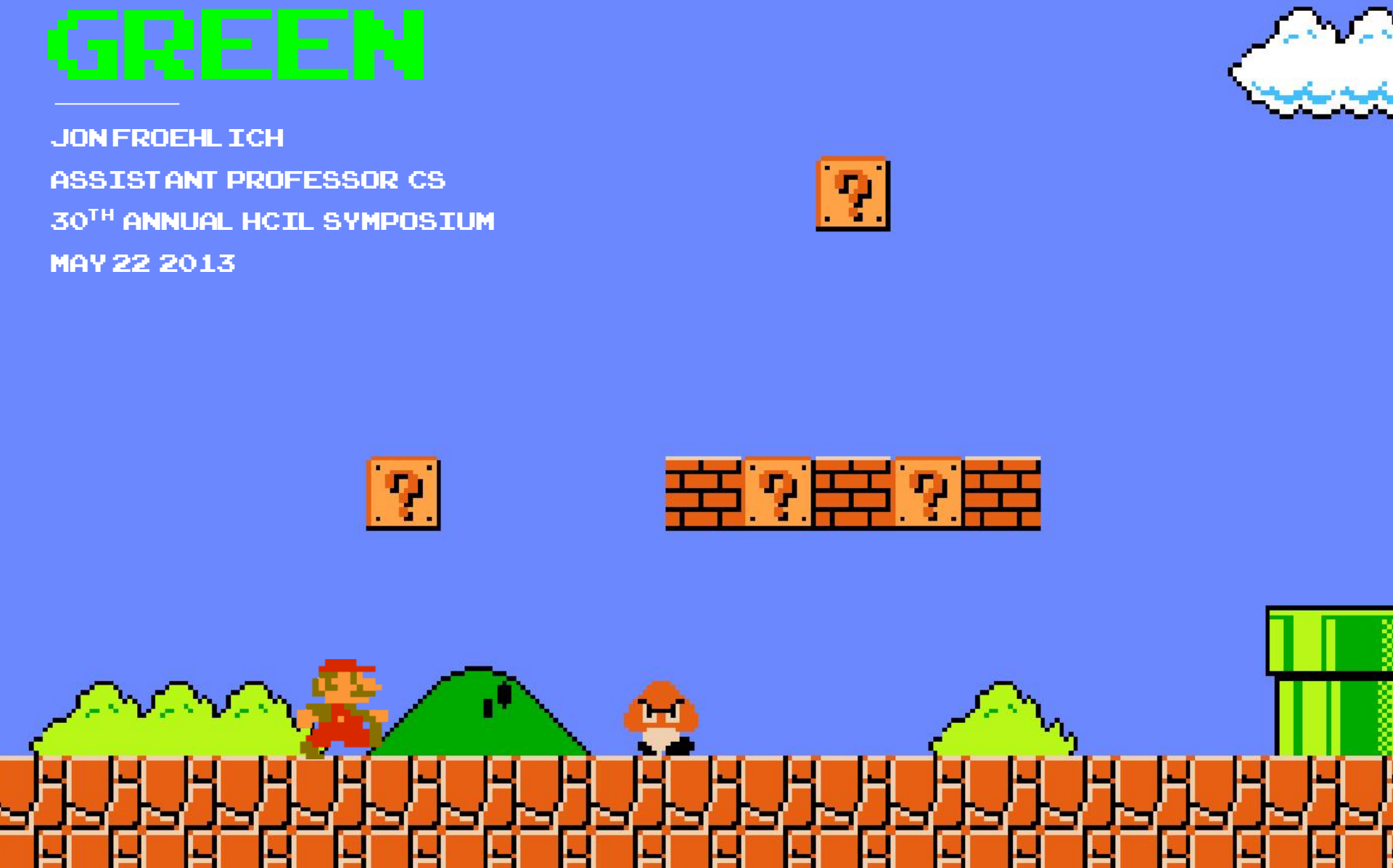
GAMIFYING GREEN

JON FROEHLICH

ASSISTANT PROFESSOR CS

30TH ANNUAL HCIL SYMPOSIUM

MAY 22 2013



SUPER MARIO BROS

GREEN EDITION



WHAT IS

GAMIFICATION

ga·mi·fi·ca·tion [gay-muh-fi-kay-shuhn]

integrating game dynamics into your site,
service, community, content, or campaign,
in order to drive participation.

(from bunchball.com)

ga·mi·fi·ca·tion [/.gāmifə'kāSHən/n]

the application of typical elements of game
playing (*e.g.*, point scoring, competition, rules
of play) to other areas of activity, typically as
an online marketing technique to encourage
engagement with a product or service

(from [Oxford Dictionary](#))

ga·mi·fi·ca·tion [gay-muh-fi-kay-shuhn]

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(from bunchball.com)

the how

ga·mi·fi·ca·tion [/.gāmifə'kāSHən/n]

the **application of typical elements of game playing** (e.g., point scoring, competition, rules of play) to other areas of activity, typically as an online marketing technique to encourage engagement with a product or service.

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(from bunchball.com)

the how
the why

ga·mi·fi·ca·tion [/.gāmifə'kāSHən/n/]
the **application of typical elements of game
playing** (e.g., point scoring, competition, rules
of play) to other areas of activity, typically as
an online marketing technique **to encourage
engagement with a product or service.**

(from [Oxford Dictionary](#))

Gamification is:

The use of game design elements in non-game contexts



Sebastian Deterding

Academic / Leading Gamification Thinker

Gamification is:

The use of game design elements in non-game contexts




Sebastian Deterding

Academic / Leading Gamification Thinker

Supplies “the how” but
not “the why”

Despite detractors, interest in **gamification** is growing


We'll get into this later

Explore trends

Hot searches

Search terms

gamification

+ Add term

▸ Other comparisons

Limit to

Web Search ▸

Worldwide ▸

2004 - present ▸

All Categories ▸

Interest over time

The number 100 represents the peak search interest

☒ News headlines ☐ Forecast



Embed

Regional interest



Related terms

Top

Rising

gamification examples	100	<div></div>
social gamification	85	<div></div>
gamification education	80	<div></div>
what is gamification	70	<div></div>
gamification marketing	70	<div></div>
gamification summit	65	<div></div>

Explore trends

Hot searches

Search terms

- gamification**
- mHealth**
- Add term
- Other comparisons

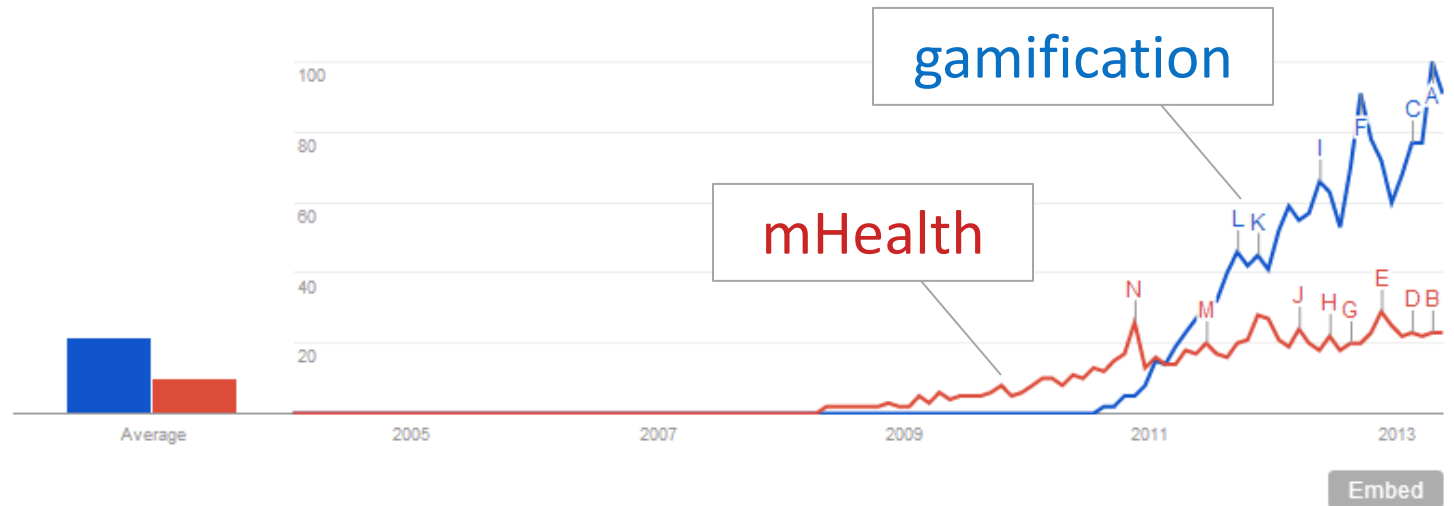
Limit to

- Web Search
- Worldwide
- 2004 - present
- All Categories

Interest over time

The number 100 represents the peak search interest

☒ News headlines ☐ Forecast



gamification **mhealth**

Regional interest



Related terms

Top **Rising**

gamification examples	100	<div></div>
social gamification	85	<div></div>
gamification education	80	<div></div>
what is gamification	70	<div></div>
gamification marketing	70	<div></div>



FEED



ME



LOG



Jon Froehlich

Active since Dec, 2011



DASHBOARD



REPORTS



TRAINING



ACTIVITIES



FRIENDS



ROUTES

ACTIVITIES



May '13

9

05/20 Running 4.07 mi.

05/19 Running 5.03 mi.

05/18 Running 6.33 mi.

05/16 Running 3.86 mi.

05/15 Running 3.79 mi.

05/06 Running 4.00 mi.

05/06 Running 4.09 mi.

05/05 Running 6.96 mi.

05/04 Running 5.56 mi.

+ Apr '13 9

+ Mar '12 12

+ Jan '13 10

+ Dec '12 7

+ Nov '12 11

+ Oct '12 8

+ Sep '12 8

Monday Run

MAY 20, 2013 - 5:08 PM



MI



4.07

DURATION



31:35

AVERAGE PACE

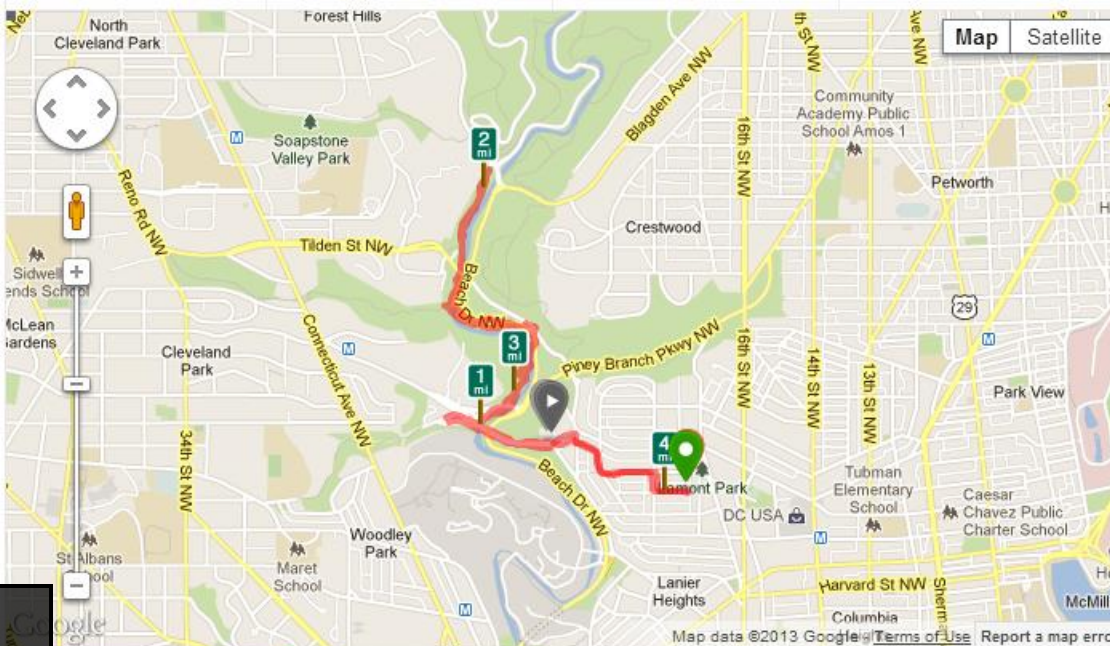


7:46

CALORIES BURNED



563



Make this a Route



TOTAL CLIMB



538



Running

Runkeeper



NIKE+ FUELBAND LIFE IS A SPORT. MAKE IT COUNT.

See how active you are and get motivated to move more.

LEARN MORE

BUY NOW



Nike+ RUNNING

Run farther. Get faster. Know more than ever before.



Nike+ FUELBAND

Make life a sport. Track your all-day activity and translate your moves into NikeFuel.



Nike+ BASKETBALL

Measures your game. Raises the game. Nike+ sensors track how high, quick and hard you play.



Nike+ KINECT TRAINING

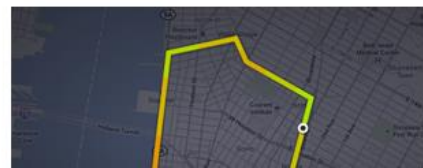
Personalized Nike Training, in your home. Kinect technology tracks your every move so you get real-time coaching.

Fitness

Nike+ Fuelband

LATEST NIKE ACTIVITY

See what's happening in Nike+ around the world.



It's Free! [Get started here](#) ▶

Overview

See all accounts

Auto categorization

Easy budgeting

Timely alerts

Safe and secure

What's free

Helpful graphs

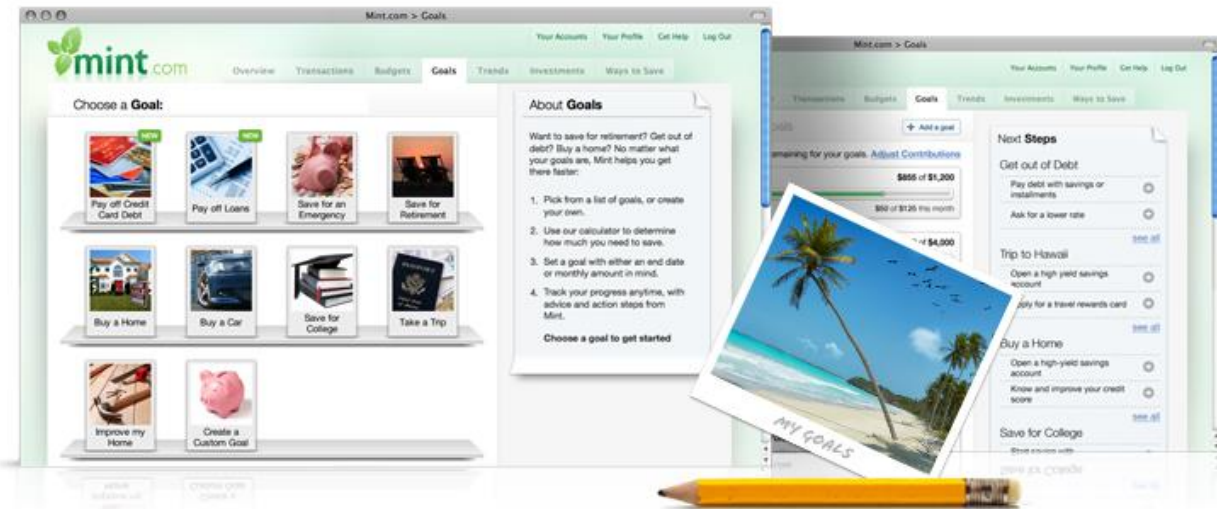
Achieve your goals

Find savings

Track investments

Mobile apps

Ready? Set? Goals!



Whether you want to buy a home, save for retirement, get out of debt or pay down student loans, Mint helps you reach your goals. Just enter how much money you need, set a date and link your goal to specific accounts so it's easy to stick to your plan.

Finances

Mint.com

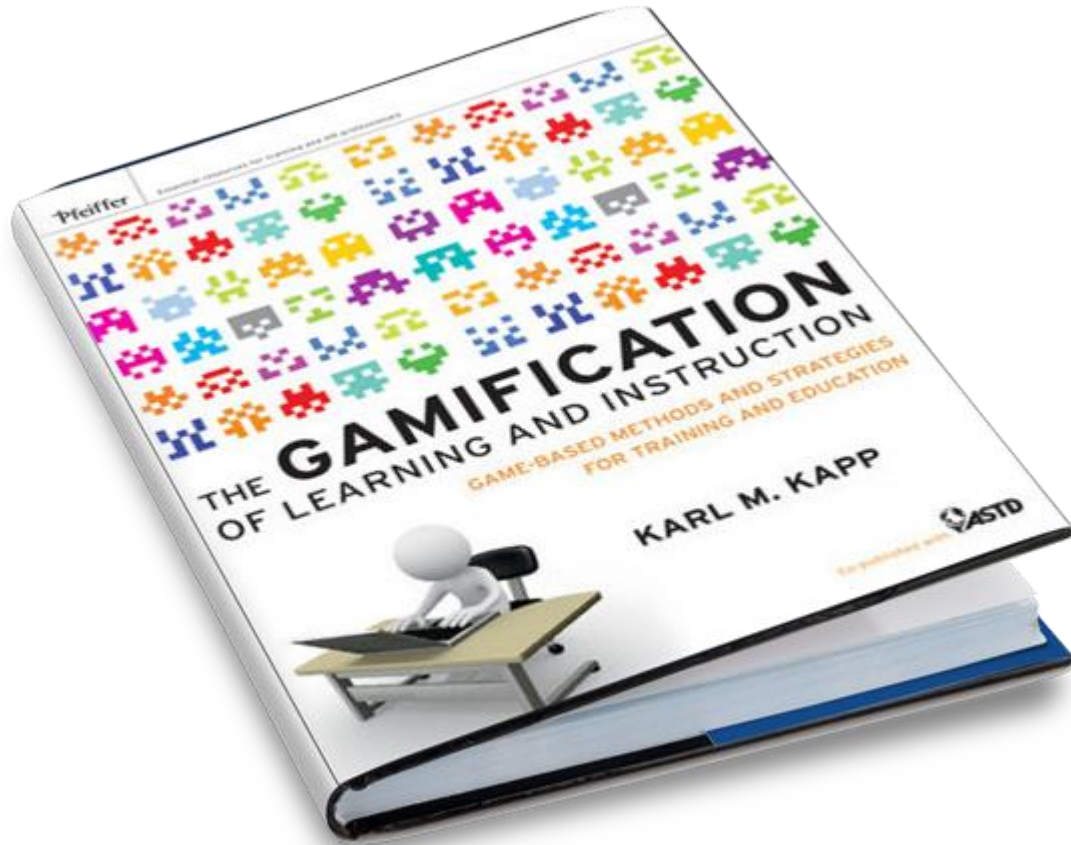


[Watch an overview video](#)



See how you're doing

You can check how close you are to your goal amount anytime. Keep up-to-date with monthly emails that track your progress, and learn how to reach your goals faster with free advice and customized next steps.



Education

The Khan Academy

Gamification is:

The use of game design elements in non-game contexts



Sebastian Deterding

Academic / Leading Gamification Thinker

Green

Gamification is:

The use of game design
elements in non-game contexts
environmental



Sebastian Deterding

Academic / Leading Gamification Thinker

Green

Gamification is:

The use of game design
elements in non-game contexts
environmental

...to promote proenvironmental
behavior



Sebastian Deterding

Academic / Leading Gamification Thinker



Rewards

For Yourself and The Planet

It's Free!

Not a member?
Get Started



Viewing US site • Switch to UK

Recyclebank®

Follow Us



My Account

Register
Sign In

Earn Points

Learn, Read, Or Take
Actions
Use Fewer Resources
Recycle
Refer A Friend

Get Rewards

Food & Beverage
Music, Books &
Magazines
Restaurants
Entertainment &
Recreation
...And More

Live Green

Home & Garden
Lifestyle
Food & Drink
Holidays &
Entertaining

About Us

How It Works
Who We Are
Green Schools

Get Help

Member Support
Privacy Policy
Membership
Agreement

Corporate Info

Partner With
Recyclebank
Newsroom
Careers

Recycling

Recyclebank



TRACKER beta

1. Log your trips 2. Measure your impact 3. See your results

TravelSmart | Tracker

Login | Register



MY TRIPS



DASHBOARD



GROUPS



FEED

TravelSmart Tracker

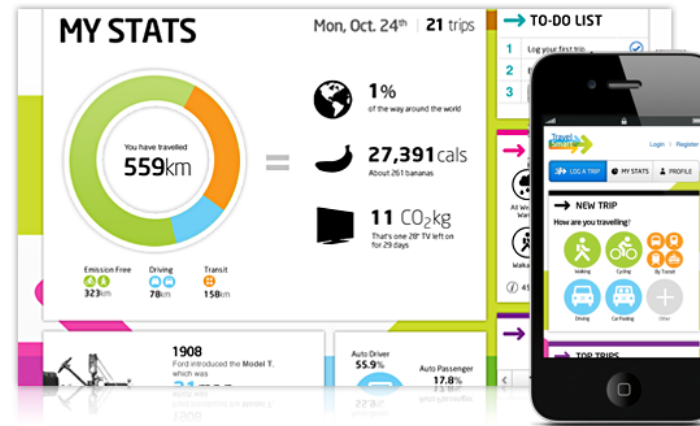
Log your trips, measure your impact, see your results. Discover the TravelSmart benefits and the impacts of your daily travels. See how your choices affect you and the community around you, and make a change for good!

It's completely **free**, and **easy** to use.

How are you going to get there?

[Log a new trip +](#)

Already on board? [Login](#) or [Register](#).



Copyright © 2013 TransLink | [Privacy Policy](#)
Send your suggestions to tracker@travelsmart.ca



Public Transit

<https://tracker.travelsmart.ca>



Welcome home

Meet the Nest Learning Thermostat >

PLAY THE NEST VIDEO >



Living with Nest >



Now at The Home Depot >



What's new >

Home HVAC

nest.com



KATHERINE BOEHRET, THE WALL STREET JOURNAL

Suddenly, I can't imagine my house without a Nest.

More >



LINDSEY TURRENTINE, CNET

★★★★★ Spectacular

Regional Rankings

Your regional rank for Dec/2010 (as of December 16, 2010)

 Dec/2010

Your Score

Ranked
3

Average Energy Economy
4 miles/kWh



Champion's Score

Average Energy Economy
4.8 miles/kWh



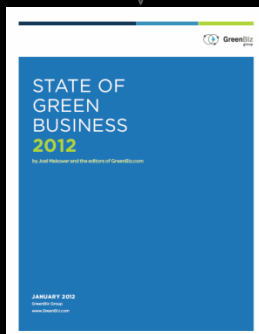
Eco-Driving

Nissan Carwings

Your Rank for Dec/2010

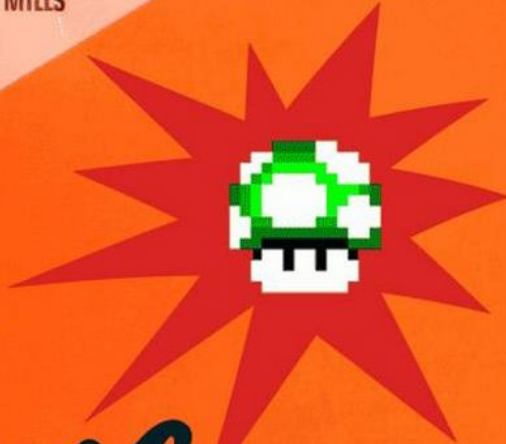


GreenBiz Group listed gamification as one of the top sustainable business trends of 2012, noting that **game mechanics are increasingly used** by companies to provide “rewards for making good, green choices”



GreenBiz Group
Cleantech Analysts / Consultancy

GENERAL  MILLS



Game
Kix

KID TESTED...MOTHER APPROVED®

NO ADDED COLORS

NO ARTIFICIAL
PRESERVATIVES

NO ADDED FLAVORS

3G OF SUGAR

CRISPY CORN PUFFS

® **NET WT 8.7 OZ (246G)**

The Gameful World

Approaches, Issues, Applications

*This talk based on my
forthcoming book chapter in
The Gameful World*

DRAFT CHAPTER FOR THE BOOK: *The Gameful World* - <http://www.gamefulworld.org/>

GAMIFYING GREEN:

Surveying and Situating Green Gamification
for Environmental Sustainability

This is a draft chapter for the forthcoming book *The Gameful World*. Some content subject to change. Note: the pagination, article double spacing, figure and table placement are for draft purposes and will be handled by the publisher for final print version.

Please cite as:

Froehlich, J. (2013). Gamifying Green: Surveying and Situating Green Gamification for Environmental Sustainability. In Walz, S. and Deterding, S. (Eds.), *The Gameful World*, MIT Press. To Appear.

The background of the slide features a collage of pet-related images. At the top, there are two pet bowls filled with dry kibble. Below them, a close-up of a pet's head is visible, looking towards the left. The overall color scheme is warm, with shades of brown and beige. The text 'GAMIFICATION INGREDIENTS' is prominently displayed in the center in a bold, white, pixelated font.

GAMIFICATION INGREDIENTS



feedback

points

collections

playfulness

levels

narrative

goals

customization

leaderboards

self-expression

unpredictable
reinforcement

feedback

points

collections

playfulness



ACHIEVEMENT UNLOCKED

Successful cooking metaphor in talk

levels

narrative

goals

customization

leaderboards

self-expression

unpredictable
reinforcement





feedback

points

collections

playfulness

levels

narrative

goals

customization

leaderboards

self-expression

unpredictable
reinforcement



feedback

playfulness

narrative

customization

self-expression

unpredictable
reinforcement

	R	S	X
Best	101010		
Graph	27348		
	26004		
	22532		
	17172		
	15917		
	12426		
	11853		
	5995		
	5196		
	4999		
	2688		

RABuffs
Alive
Healer
Rock (Player)
Mark

Achievements (F9)

Menu (F10)

Message Log (F11)

Help (F12)

8610

6191

165/200

Main Objectives

- ☐ Kill 1500 Enemy Forces (Research)
- ☐ Defend Until the Last Protoss Falls

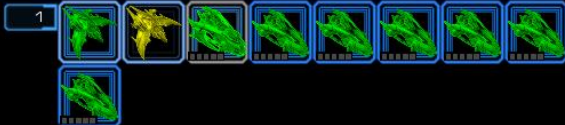
Bonus Objectives

- ☒ Protect the Protoss Archives (Research)

Enemies Slain
1095

Upgrade complete.

We're under attack!



A top-down view of a wooden cutting board used for food preparation. On the board are several glass and metal bowls containing ingredients: rolled oats, walnuts, white flour, and flax seeds. A small metal cup holds a yellow liquid, likely oil. A spoon with a red powder (possibly paprika) lies on the board. A green bottle of olive oil is partially visible at the top. A dark semi-transparent text box is centered over the ingredients, and a smaller white box with the word 'feedback' is connected to the main text box by a line.

feedback

Has **informational** and **motivational properties**:
it provides a basis for
assessment and action,
and enables progress
towards a goal.



eco-feedback

sensing and visualizing behavior to reduce environmental impact





Sensing and Feedback of Everyday Activities to Promote Environmental Behaviors

Jon E. Froehlich

A dissertation
submitted in partial fulfillment of the
requirements for the degree of

Doctor of Philosophy

University of Washington

2011

Program Authorized to Offer Degree:
Department of Computer Science and Engineering

Department of Computer Science and Engineering
Program Authorized to Offer Degree:



feedback

points

collections

playfulness

levels

narrative

goals

customization

leaderboards

self-expression

unpredictable
reinforcement

It's not so easy





Right ingredients
but boring...

By 2014, 80% of current gamified applications will fail to meet business objectives **primarily due to poor design.**



Gartner Group
Technology Analyst Company

The difference is in the **design** and **execution**



success

vs.



failure

The difference is in the **design** and **execution**



ACHIEVEMENT UNLOCKED

2nd successful cooking metaphor
in talks. **Double bonus.**



success



failure




GREEN

GAMIFICATION

EXAMPLES

OPPOWER

Opower's mission is to give everyone, everywhere, the information, control, and motivation they need to save energy.


This is where behavioral psychology and gamification come in

Traditional Bill:



Florida Power & Light Company
PO Box 025576
Miami, FL 33102

/ 27

Please request changes on the back.
Notes on the front will not be detected.

The amount enclosed includes the following donation:
FPL Care To Share \$

B 2,3,4,7,8 4118 6

#BWNDJNQ *** AUTO **CO 4501
#0148843BQ485818# 116049 Z

DELRAY BEACH FL 33445-3504

Make check payable to FPL in U.S. funds
and mail along with this coupon to:

FPL
GENERAL MAIL FACILITY
MIAMI FL 33188-0001

Account number	Total amount you owe	New charges due by	Amount enclosed
	\$295.43	Jul 16 2008	\$

Your electric statement

For: May 27 2008 to Jun 25 2008 (29 days)

Customer name:

Service address:

Account number:

Statement date: Jun 25 2008

Next meter reading: Jul 25 2008

Amount of your last bill	Payments (-)	Additional activity (+ or -)	Balance before new charges (=)	New charges (+)	Total amount you owe (=)	New charges due by
328.10	328.10 CR	0.00	0.00	295.43	\$295.43	Jul 16 2008

Meter reading - Meter 7C18171

Current reading	52489	Amount of your last bill	328.10
Previous reading	- 50153	Payment received - Thank you	328.10 CR
kWh used	2336	Balance before new charges	\$0.00

Energy usage

	Last Year	This Year
kWh this month	3375	2336
Service days	32	29
kWh per day	105	81

**The electric service amount includes the following charges:

Customer charge:	\$5.34
Fuel:	\$135.46

(First 1000 kWh at \$0.052270)

(Over 1000 kWh at \$0.062270)

Non-fuel: \$110.35

(First 1000 kWh at \$0.041340)

(Over 1000 kWh at \$0.051660)

New charges (Rate: RS-1 RESIDENTIAL SERVICE)

Electric service amount	251.15**
Storm charge	2.59
Gross receipts tax	6.51
Franchise charge	15.75
Utility tax	14.51
Late payment charge	4.92
Total new charges	\$295.43

Total amount you owe \$295.43

- A late payment charge of 1.50% will apply if not paid by July 16, 2008, and your account may be subject to being billed an additional deposit.

- Would you like one less bill to think about & help the environment too? Enroll in FPL Automatic Bill Pay & your bill is always paid on time. Save time, postage, check writing & paper. Plus, cut fuel consumption of cars & trucks that transport checks. Enroll at FPL.com or see authorization form in this bill.

Opower Bill:



An Exelon Company

Home electricity report

Account number: 1234567890

Report period: 04/10/09 - 05/08/09

We are pleased to provide this personalized report to you as part of a pilot program. The purpose of the report is to:

Provide information This report is an educational tool to help you understand your home's electricity use in the context of other homes.

Track progress We will help you learn about how your home's usage changes over time and where you likely have opportunities to save.

Share energy efficiency tips On the back of the report, we provide ideas for saving energy and money. You can find more tips at www.ComEd.com/energyreport

JOHN DOE

Last Month Neighbor Comparison

You used **48% more** than your efficient neighbors.



HOW YOU'RE DOING:

GREAT

GOOD

MORE THAN AVERAGE

* kWh: A 100-Watt bulb burning for 10 hours uses 1 kilowatt-hour.

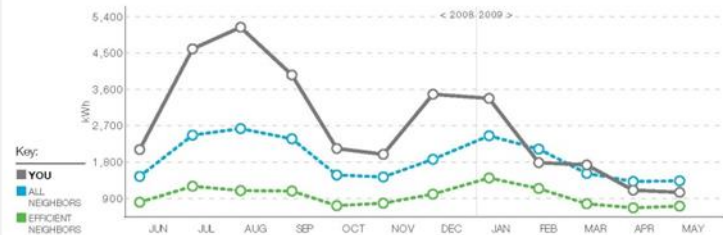
WHO ARE YOUR "NEIGHBORS"?

ALL NEIGHBORS
Approximately 60 occupied, nearby homes that are similar in size to yours
(avg 3,379 sq ft)

EFFICIENT NEIGHBORS
The most efficient 20 percent from the "All Neighbors" group

Last 12 Months Neighbor Comparison

You used **45% more** electricity than your neighbors.
This costs you about **\$1,029 extra** per year.



Personalized Action Steps

☐ Set your thermostat for comfort and savings

☐ Choose efficient light bulbs

☐ Look for the ENERGY STAR® label

TURN OVER TO LEARN MORE

Action Steps

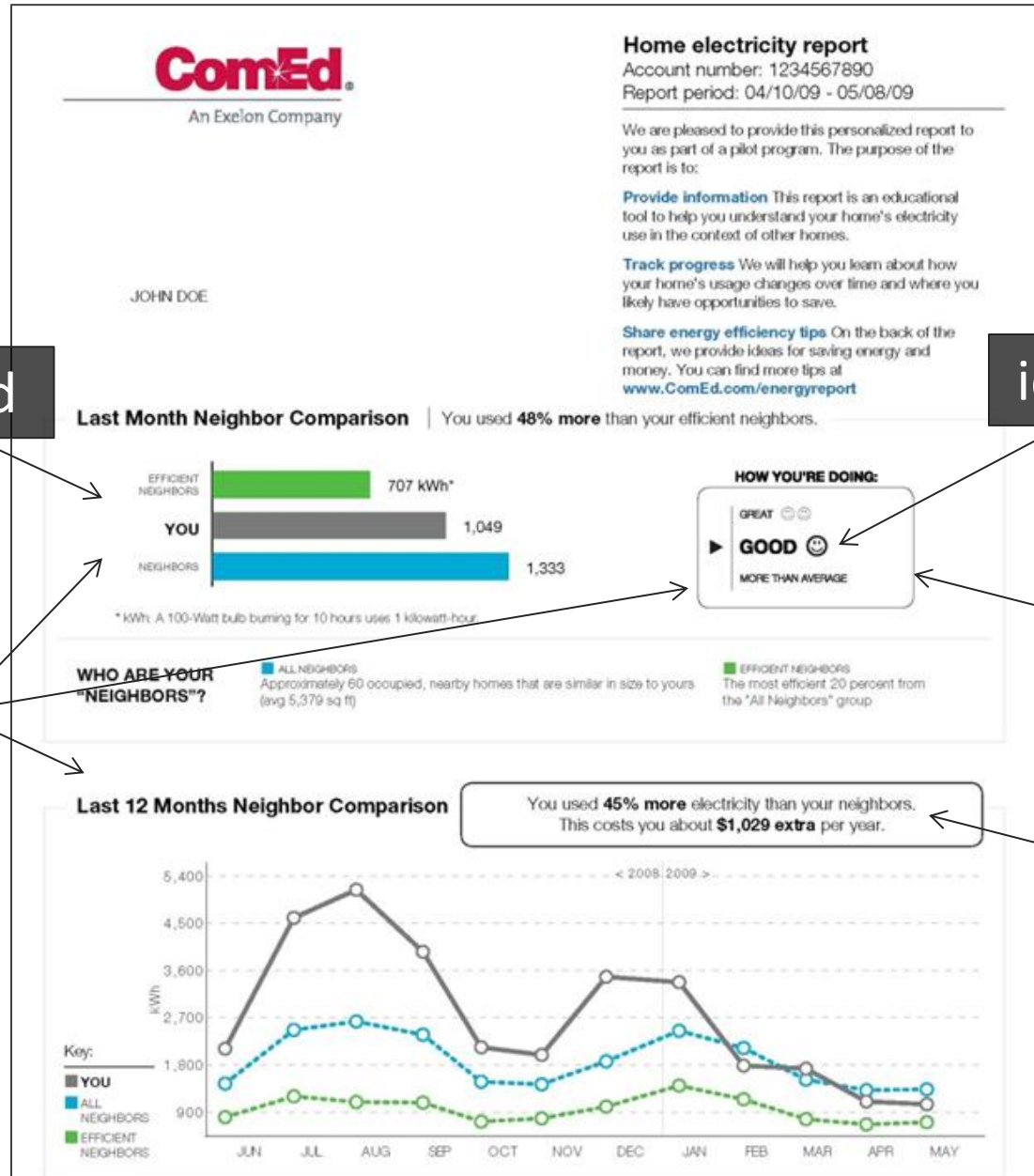
☐ Set your thermostat for comfort and savings

☐ Choose efficient light bulbs

☐ Look for the ENERGY STAR® label

TURN OVER TO LEARN MORE

A Gamification Lens



leaderboard

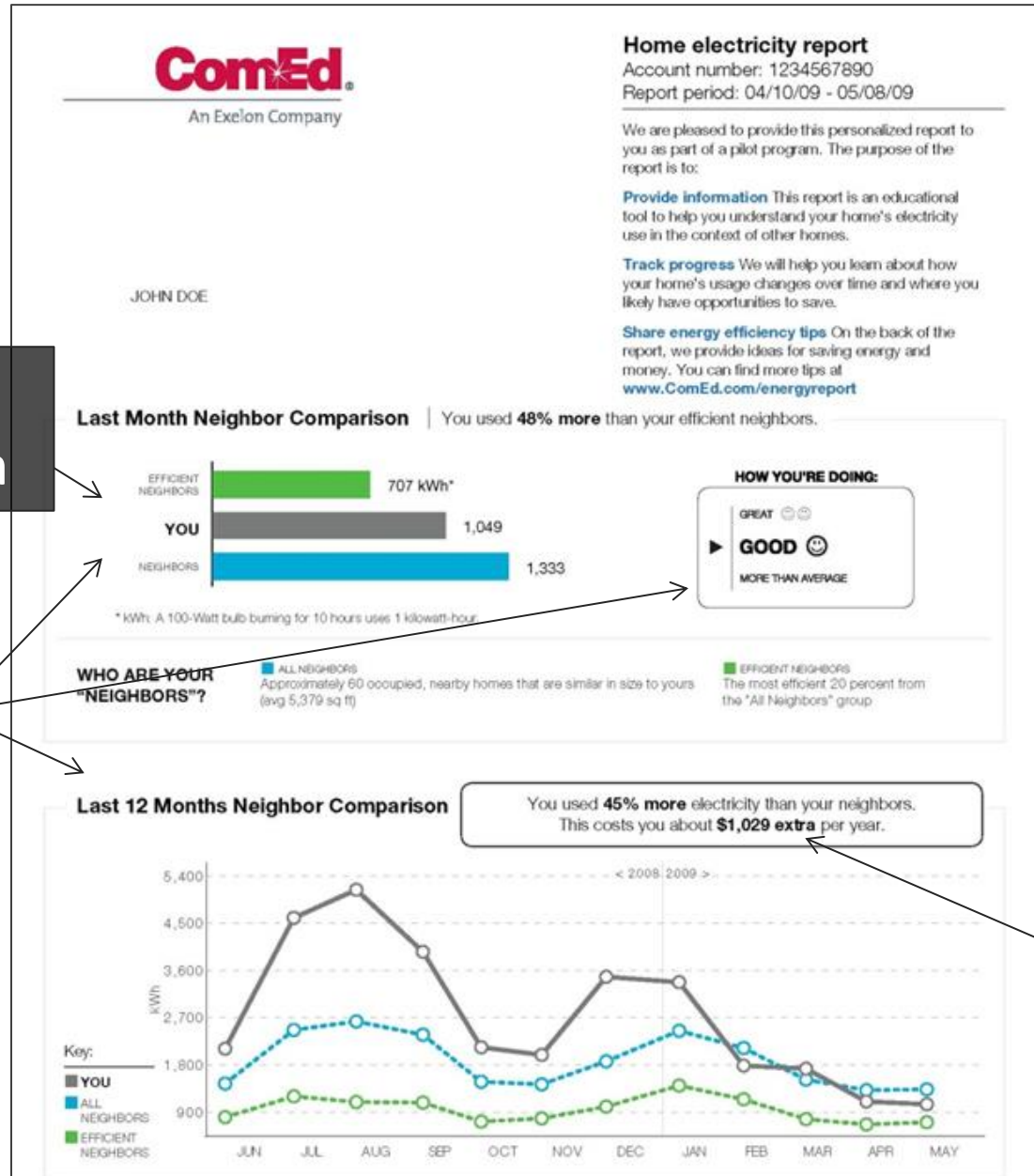
iconic rewards

3 levels

feedback

goals
(implicit)

A Behavioral Science Lens



descriptive
social norm

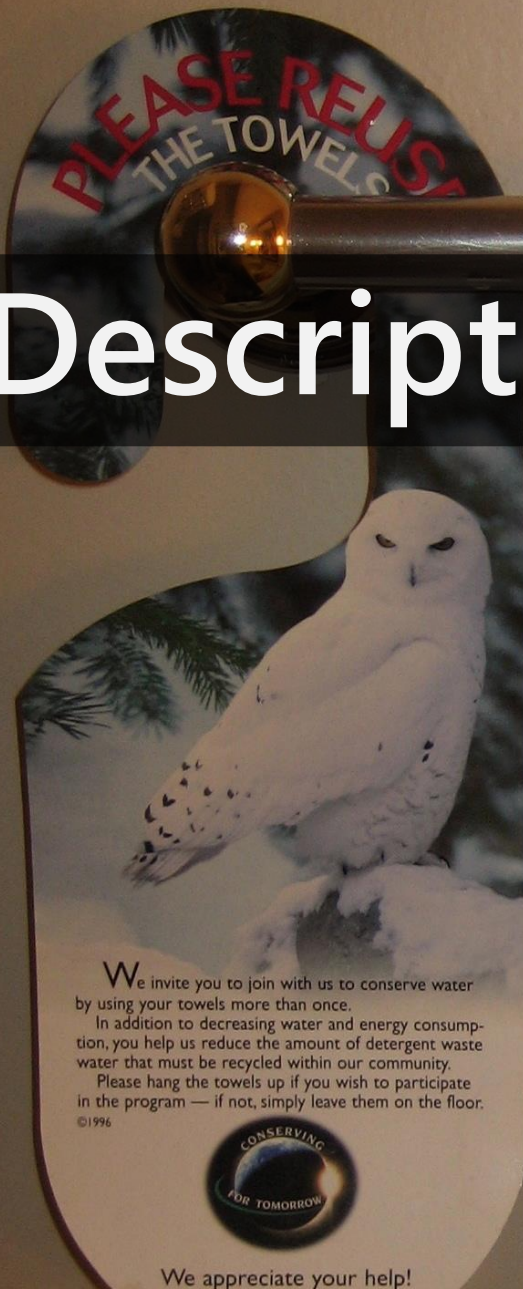
feedback

loss
aversion

Descriptive Norms

A descriptive social norm describes what is typical or normal behavior in a particular context:

“If everyone is doing it, it must be a sensible thing to do”



We invite you to join with us to conserve water by using your towels more than once.

In addition to decreasing water and energy consumption, you help us reduce the amount of detergent waste water that must be recycled within our community.

Please hang the towels up if you wish to participate in the program — if not, simply leave them on the floor.

©1996



We appreciate your help!



Printed on recycled paper.
Laminated to reduce waste.

JOIN YOUR FELLOW GUESTS IN HELPING TO SAVE THE ENVIRONMENT.

Almost 75% of guests who are asked to participate in our new resource savings program do help by using their towels more than once.

You can join your fellow guests in this program to help save the environment by reusing your towels during your stay.



We appreciate your help!



Printed on recycled paper.
Laminated to reduce waste.

standard environmental message

descriptive norm message

26% increase ↗

We appreciate your help!

But there's a **problem** with social norms...

The Boomerang Effect

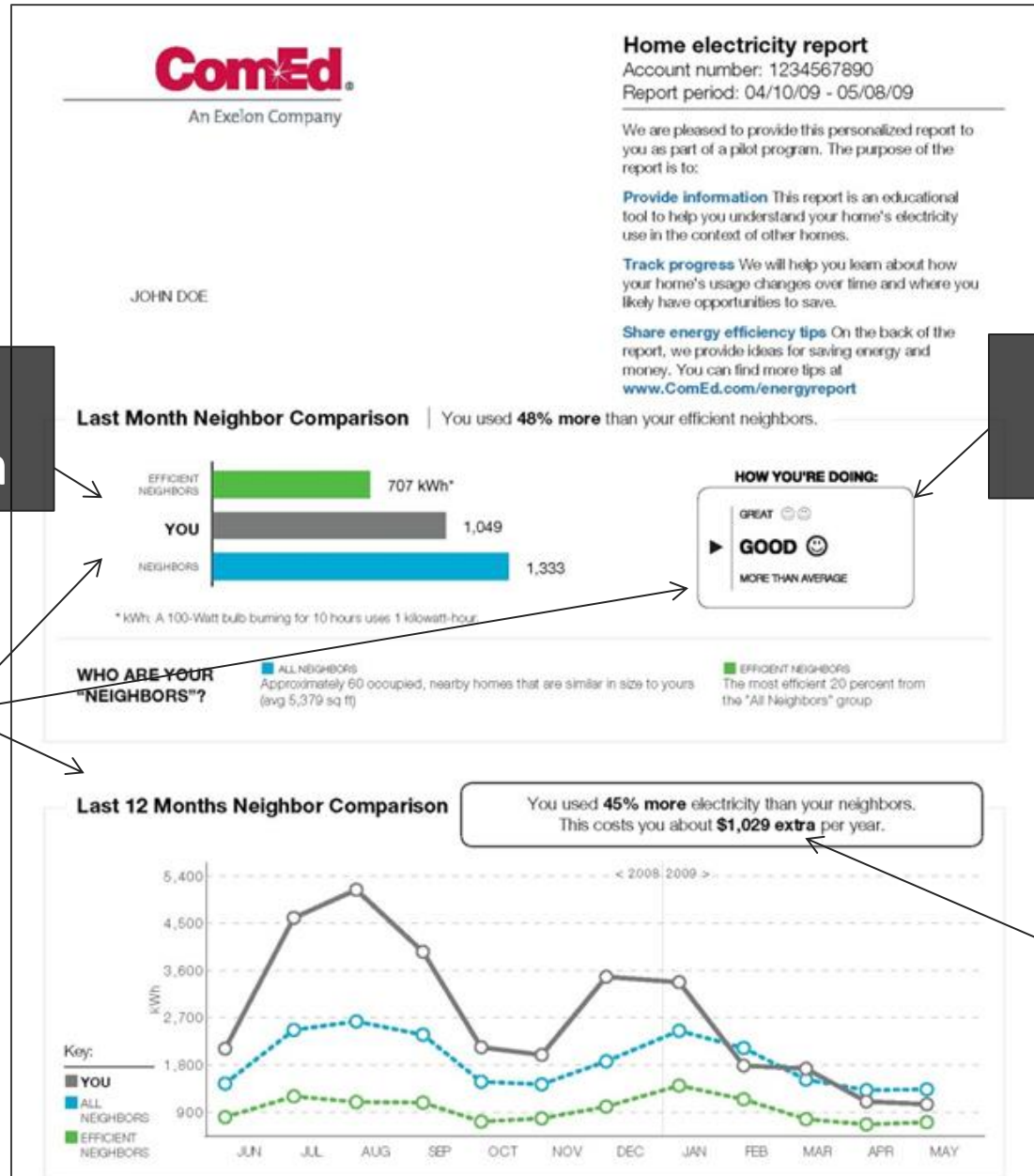


The Boomerang Effect

enter injunctive
messaging!



A Behavioral Science Lens



descriptive
social norm

injunctive
messaging

feedback

loss
aversion

Is Opower successful?

EVIDENCE FROM TWO LARGE FIELD EXPERIMENTS THAT PEER COMPARISON
FEEDBACK CAN REDUCE RESIDENTIAL ENERGY USAGE

Ian Ayres
Sophie Raseman
Alice Shih

Working Paper 15386
<http://www.nber.org/papers/w15386>

NATIONAL BUREAU OF ECONOMIC RESEARCH
1050 Massachusetts Avenue
Cambridge, MA 02138
September 2009

Evaluation Report: OPOWER SMUD
Pilot Year2

PUBEC-03119; No of Pages 14

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Social norms and energy conservation

Hunt Allcott

MIT, United States
New York University, United States

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L94
Q41

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Energy demand
Randomized field experiments

ABSTRACT

This paper evaluates a series of programs run by a company called OPOWER to send Home Energy Report letters to residential utility customers comparing their electricity use to that of their neighbors. Using data from randomized natural field experiments at 600,000 treatment and control households across the United States, I estimate that the average program reduces energy consumption by 2.0%. The program provides additional evidence that non-price interventions can substantially and cost effectively change consumer behavior: the effect is equivalent to that of a short-run electricity price increase of 11 to 20%, and the cost effectiveness compares favorably to that of traditional energy conservation programs. Perhaps because the treatment included descriptive social norms, effects are heterogeneous: households in the highest decile of pre-treatment consumption decrease usage by 6.3%, while consumption by the lowest decile decreases by only 0.3%. A regression discontinuity design shows that different categories of “injunctive norms” played an insignificant role in encouraging relatively low users not to increase usage.

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1. Introduction

Climate change has emerged as one of the most important economic policy issues of the early 21st century, and many view energy efficiency as an appealing approach to reducing greenhouse gas emissions. Traditionally, economists and policymakers have focused on relative prices as the primary force driving energy demand. As a result, carbon cap-and-trade programs are the centerpiece of proposed climate change policies, and subsidies for energy efficient durable goods draw the vast majority of public energy efficiency funding in the U.S. (Gillingham et al., 2006).

There are three problems with relying on price-based energy conservation programs. First, interest has dramatically increased in non-price energy conservation programs that are informed by insights from behavioral science and evaluated via randomized trials. Non-price interventions are typically inexpensive relative to subsidies, and as demonstrated by Bertrand et al. (2010) in the context of consumer finance, carefully-crafted psychological cues can have effects on demand that are comparable to large changes in relative prices. A critical challenge, however, is to craft interventions that are powerful and cost-effective when implemented at large scale.

This paper examines one of the most notable non-price energy conservation programs, OPOWER's Home Energy Report (HER) pilot in the San Francisco Bay Area. OPOWER is a company that sends letters to residential utility customers comparing their electricity use to that of their neighbors. Using data from randomized natural field experiments at 600,000 treatment and control households across the United States, I estimate that the average program reduces energy consumption by 2.0%. The program provides additional evidence that non-price interventions can substantially and cost effectively change consumer behavior: the effect is equivalent to that of a short-run electricity price increase of 11 to 20%, and the cost effectiveness compares favorably to that of traditional energy conservation programs. Perhaps because the treatment included descriptive social norms, effects are heterogeneous: households in the highest decile of pre-treatment consumption decrease usage by 6.3%, while consumption by the lowest decile decreases by only 0.3%. A regression discontinuity design shows that different categories of “injunctive norms” played an insignificant role in encouraging relatively low users not to increase usage.

Special thanks to Tyler Curtis and Alex Laskey from Po to earlier drafts. The views expressed herein are those of the author and do not necessarily reflect the views of the National Bureau of Economic Research.

NBER working papers are circulated for discussion and comment only. They have not been reviewed or approved by the NBER staff.

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November Neighbor Comparison

You used **28% MORE** energy than your efficient neighbors



HOW YOU'RE DOING

GREAT 😊😊

▶ **GOOD** 😊

MORE THAN GOOD

~2.5% energy savings

WHO ARE YOUR "NEIGHBORS"?

* This energy index combines electricity (kWh) and natural gas (therms) into a single measurement.

NEIGHBORS

Approximately 100 comparable nearby homes that are similar in size to yours (avg 2,023 sq ft) and have both electricity and natural gas service.

Neighbor Comparison

You used **74% MORE** energy than your efficient neighbors. This costs you a lot more.

20 million
tons of coal



A photograph of a nuclear power plant featuring two large, grey, hourglass-shaped cooling towers. In the center, there is a smaller, cylindrical containment dome. The plant is situated behind a chain-link fence, with some trees and utility poles visible in the foreground. The sky is a clear, pale blue.

yearly output
of 4 nuclear
power plants

[Armel, BECC 2008]

Together with our 80 utility clients, we've now saved 2 Terawatt hours

That's enough energy to take the city of Sacramento off the grid!

Find out more >

Sacramento

NEWS



Opower makes Disruptor 50 List >>
Opower named top energy innovator

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BLOG



Earth Day at Opower >>
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HELLO, WE'RE OPOWER



>>

MEET THE TEAM

JOIN US

GREEN

GAMIFICATION

ECO-DRIVING



There is a well known link between
DRIVER BEHAVIOR *and* **FUEL ECONOMY**

Greene, 1986; Ford, 2008a; Gonder, Earleywine, & Sparks, 2012;



*Fuel economy can vary by up to
25% due to driver behavior*



Economical Driving

ECO-DRIVING BEHAVIORS

Accelerating moderately

Anticipating traffic flow & signals

Driving at the speed limit

Eliminating excessive idling

Good car maintenance

*If 1/3rd US drivers adopted
eco-driving behaviors*

SAVE

33 million metric tons of CO₂

Feedback in the automobile



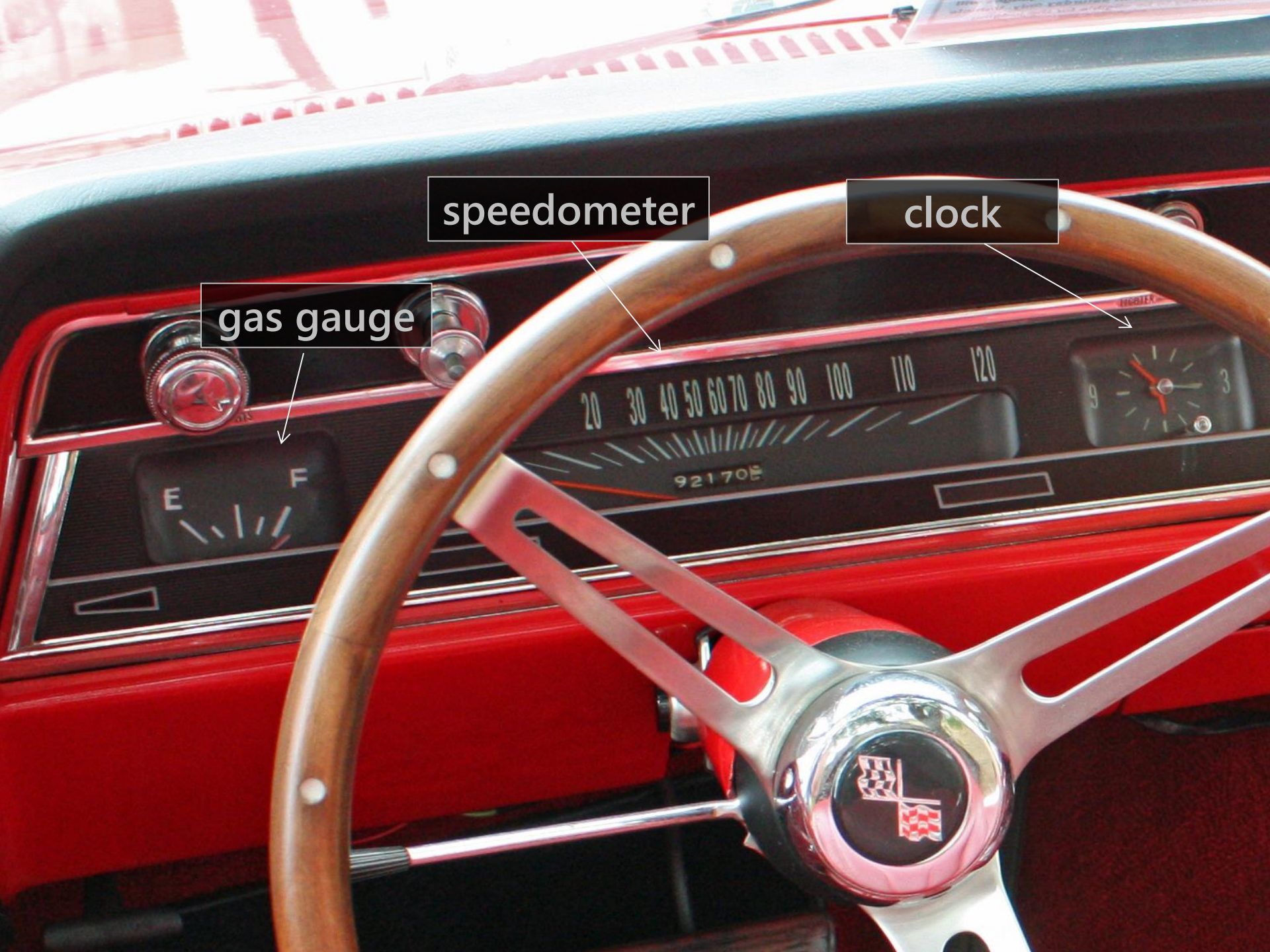
Early steam-powered cars
had no speedometers!



clock

gas gauge

speedometer!



speedometer

clock

gas gauge



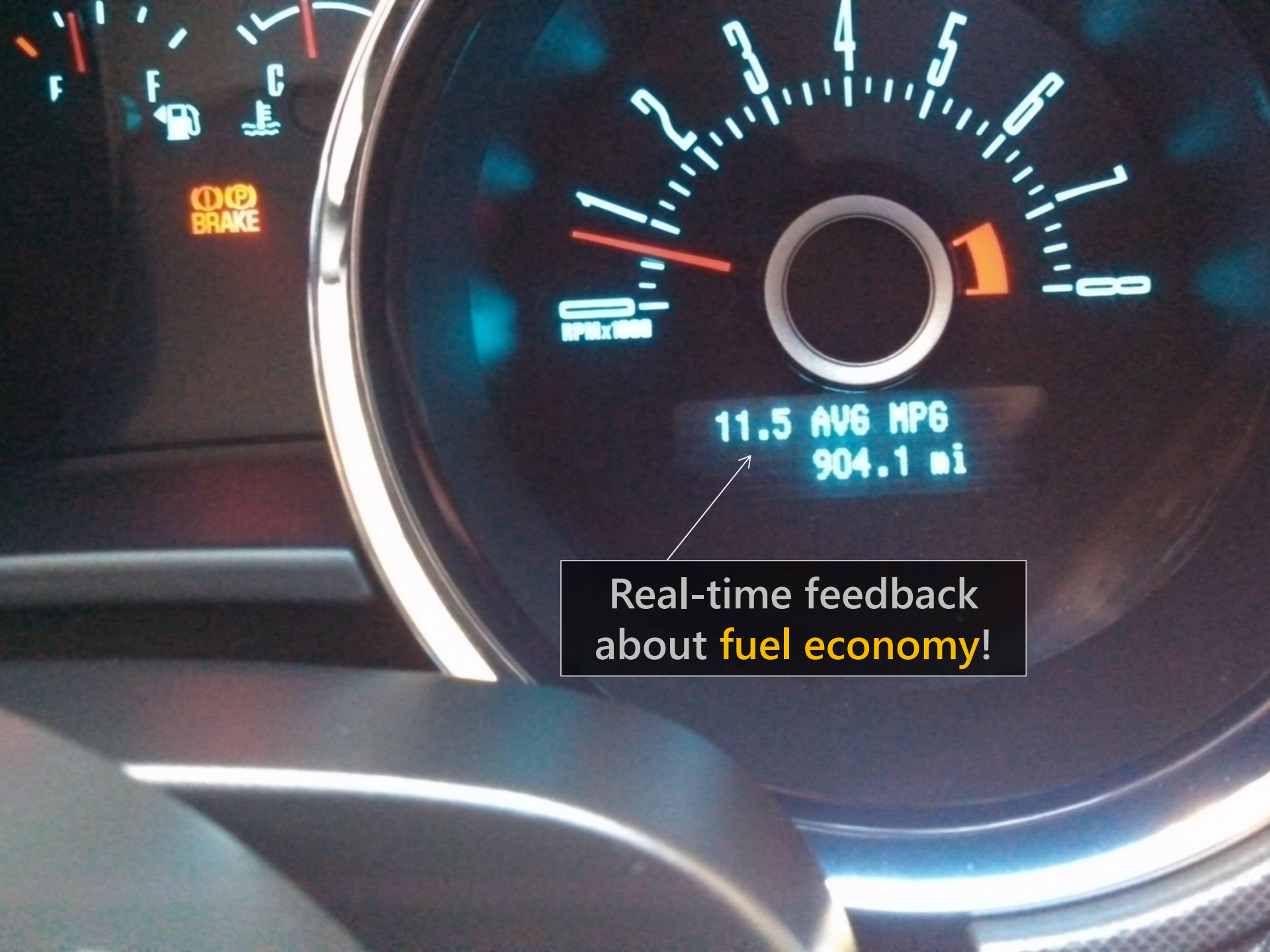
speedometer

tachometer

gas gauge

Then... **a breakthrough**





BRAKE

RPM x 1000

11.5 AVG MPG
904.1 mi

Real-time feedback
about **fuel economy!**

Then... **another breakthrough**



Toyota Prius

Japan Release 1997; Worldwide 2000

19. PRND 11

Consumption

OUTSIDE TEMP 61°F

⚡=50Wh Regenerated



Energy

Consumption

40.3MPG

7377 miles

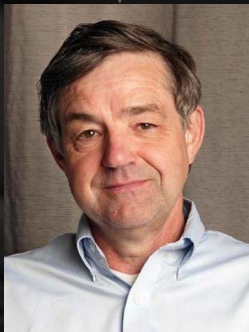
Reset

ODO
TRIP



km/h
MPH

Constantly watching the mileage measurements on the Prius's little video screen is really a **mobilized video game**. It's NOT simply driving a car.



Harry Fuller

Former executive editor at CNET

Drivers interpret the feedback as a

GAME

Prius Designed in **Pre-Gamification** Era



When we observed hybrid drivers, we found they were **going for high scores**, a **gaming behavior** that has never existed in cars before. We designed to accommodate it.



Steve Bishop
Designer at IDEO

Ford SmartGauge

Debuted in 2010



Honda Eco-Assist

gamification
panel



ECO ASSIST

The Ecological Drive Assist System (Eco Assist) feature guides drivers to realise the full benefits of Honda Hybrid Technology.

SCORING FUNCTION

Cummulatively/Long Term

IGNITION ON

Eco Guide when Ignition ON - Grow "leaf" while driving. A more fuel efficient driving style will provide you with faster growth.



"LEAF" GROWS IN EACH STAGE

"Leaves" grow in three stages as drivers adopt a more fuel-efficient driving style.

IGNITION OFF

Eco Guide when Ignition OFF - The grown leaves will accumulate and gradually form a trophy to indicate fuel-efficiency driving level: Beginner, Advanced, Congratulations.



STAGE 1



STAGE 2



STAGE 3



BEGINNER



ADVANCED



CONGRATULATIONS



BLUE- UNECONOMICAL DRIVING



BLUE-GREEN- MODERATELY FUEL-EFFICIENT



GREEN- FUEL-EFFICIENT DRIVING

Nissan Carwings

[Regional Rankings](#)

[World Rankings](#)



Rankings



Eco Tree

Regional Rankings

Your regional rank for Dec/2010 (as of December 16, 2010)



Dec/2010

Your Score

Ranked

3

Average Energy Economy

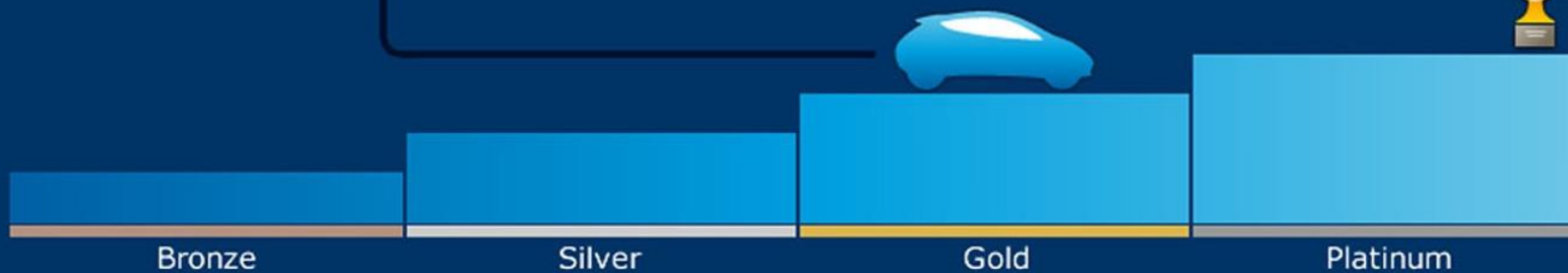
4 miles/kWh



Champion's Score

Average Energy Economy

4.8 miles/kWh



Your Rank for Dec/2010

Are these systems **successful?**



Analyzed **400,000 journeys** by
5,697 drivers across 5 countries
**Drivers reduced consumption
by 6% with eco:Drive**

GAMIFICATION CRITICISMS

A large red circle is positioned on the left side of the slide, containing the title text in white.

GAMIFICATION CRITICISMS

Overhyped and superficial

Play should be voluntary

Intrinsic vs. extrinsic motivation

Credibility and trust

Point inflation

Ethical issues

Undermines user agency

...

Gamification is an inadvertent con. It tricks people into believing that there's a simple way to imbue their thing (bank, gym, job, government, health) with the psychological, emotional and social power of a great game.



Margaret Robertson
Game Designer / Consultant

At SCVNGR we like to joke that with seven game dynamics you can pretty much **get anyone to do anything**.



Seth Priebatsch

Co-founder of SCVNGR & LevelUp



Welcome to Zema Good!

Thanks for stopping by. We're presently in invitation-only beta, but if you're interested in being the first to know about our public launch, what e-mail would you like us to use to reach you?

[Join Our Notification List](#)

If you're already a member of the Zema Good Network, click [here](#) to login.

Business Model:
Partner with utilities.
Pay virtual currency for
verified energy efficiency.



Copyright 2012 Zema Good Inc. All Rights Reserved.

[Developers](#) [Contact Us](#)

<http://zemagood.com>

You will become [energy] efficient
in spite of yourself because **you**
want that farm cash.



Eric Senunas

Co-Founder Zema Good, Inc



Slide based on Sebastian Deterding's Meaningful Play talk, 2011: <http://codingconduct.cc/Meaningful-Play>

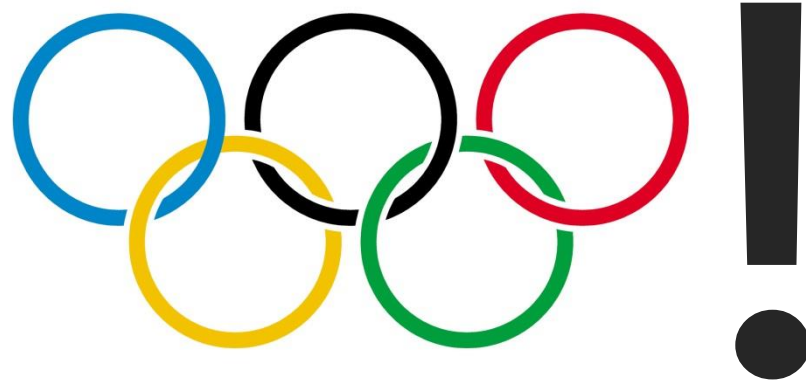
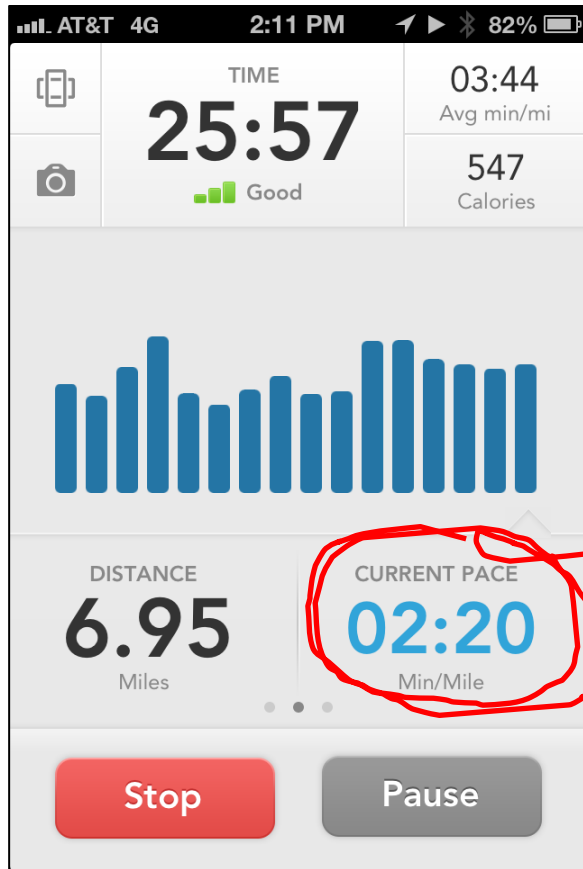
Intrinsic vs. Extrinsic motivation



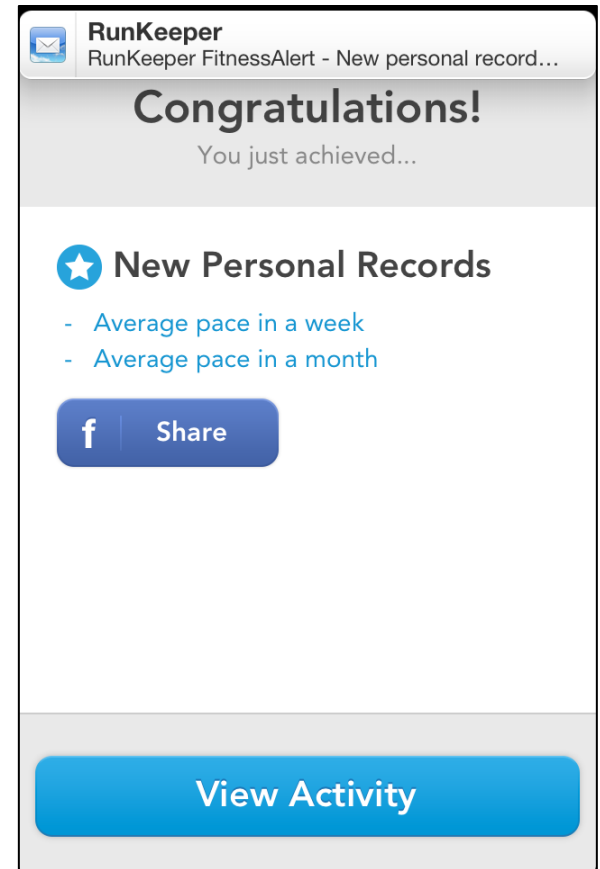
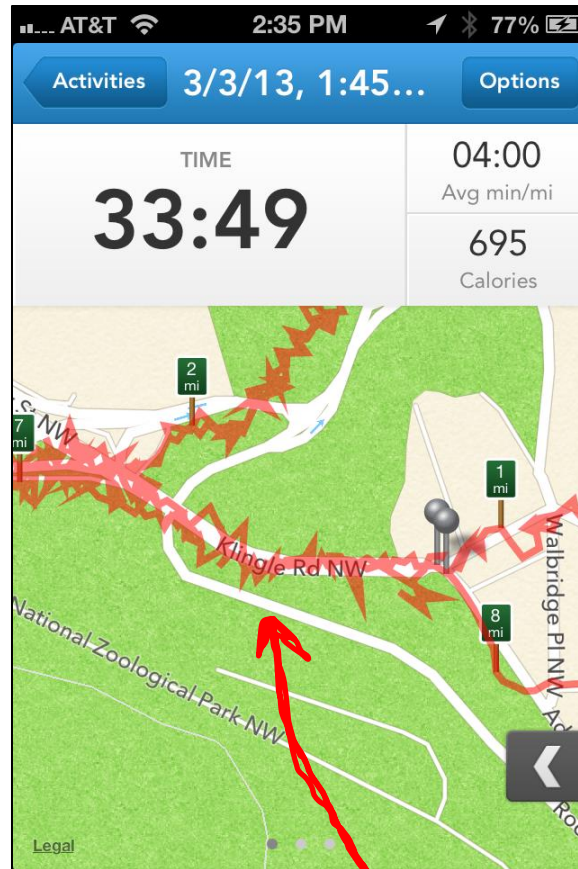
When sensors go wrong, **gamification breaks.**



When sensors go wrong, **gamification breaks.**

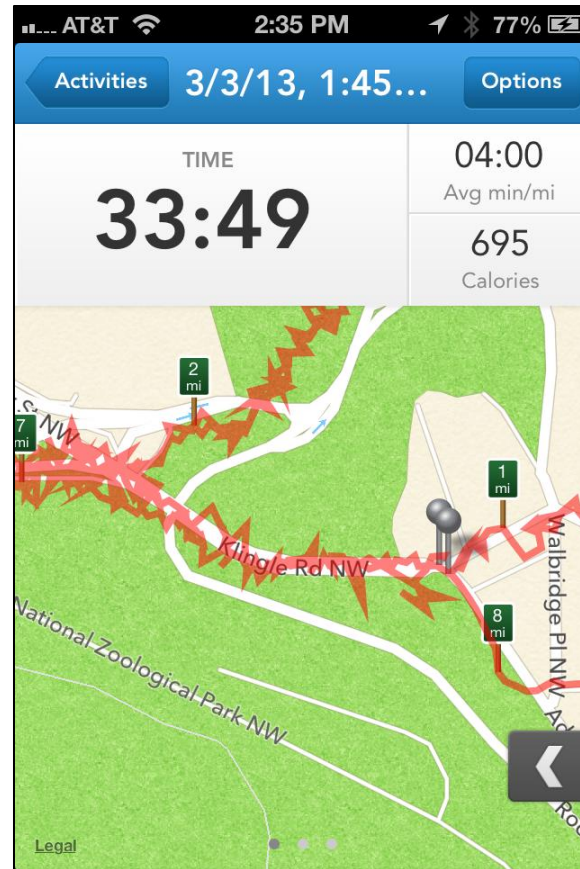


When sensors go wrong, **gamification breaks.**



*GPS sensor could not get a good fix and
Runkeeper does not properly smooth the signal*

When sensors go wrong, **gamification breaks.**



The screenshot shows the RunKeeper app interface displaying a 'Congratulations!' message. The status bar at the top indicates RunKeeper, RunKeeper FitnessAlert - New personal record..., and 77% battery. The main display features a large 'Congratulations!' message with 'You just achieved...' below it. A blue star icon is next to the text 'New Personal Records'. Below this, there are two bullet points: '- Average pace in a week' and '- Average pace in a month'. A blue button with a Facebook 'f' icon and the text 'Share' is visible. At the bottom, there is a large blue button with the text 'View Activity'.

RunKeeper
RunKeeper FitnessAlert - New personal record...

Congratulations!
You just achieved...

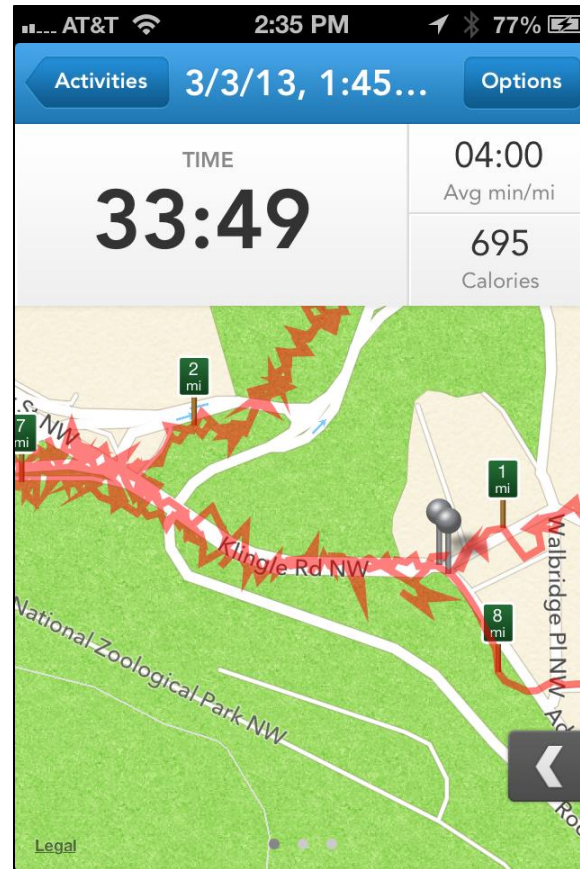
★ **New Personal Records**

- Average pace in a week
- Average pace in a month

f Share

View Activity

When sensors go wrong, **gamification breaks.**



RunKeeper
RunKeeper FitnessAlert - New personal record...

Congratulations!
You just achieved...

★ New Personal Records

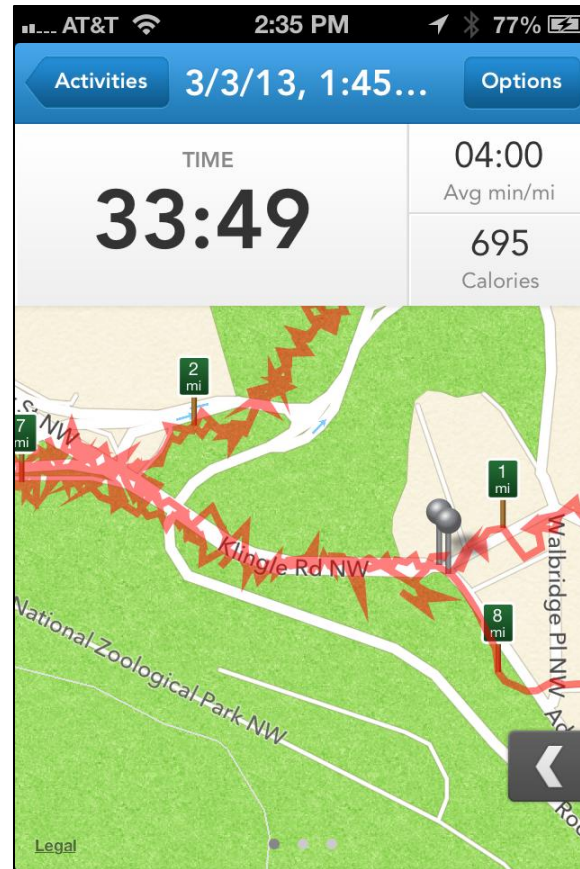
- Average pace in a week
- Average pace in a month

f Share

I'll take it!!!

View Activity

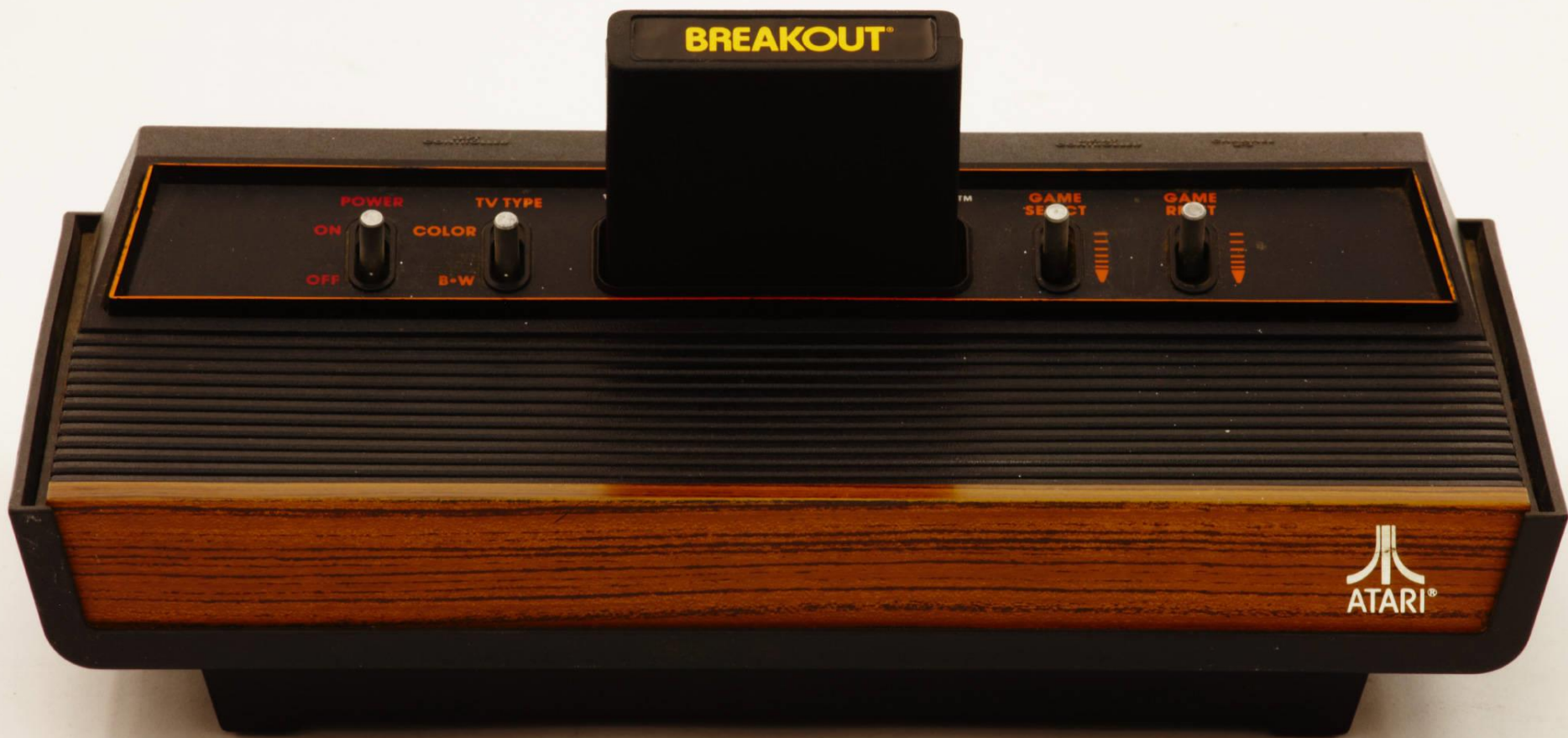
When sensors go wrong, **gamification breaks.**



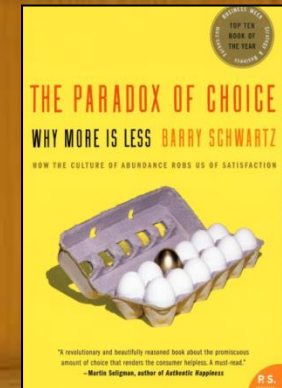
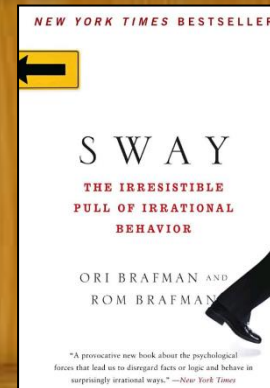
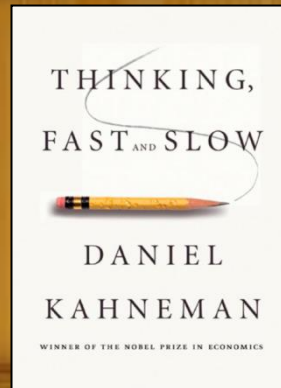
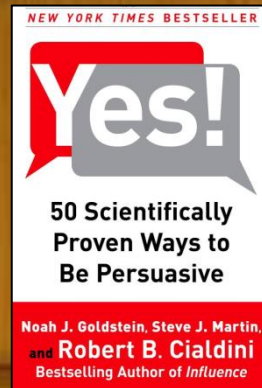
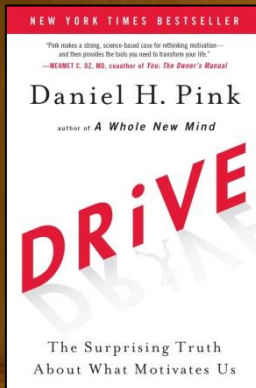
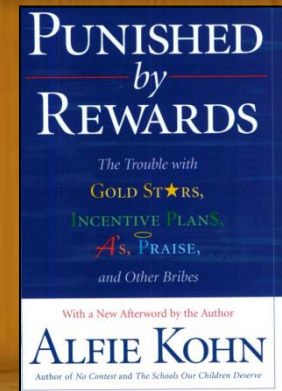
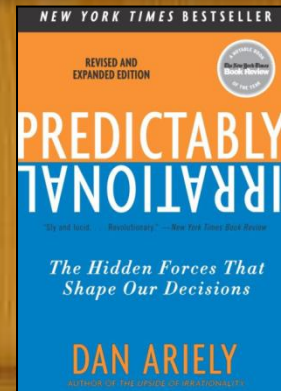
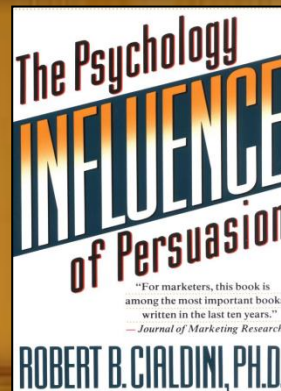
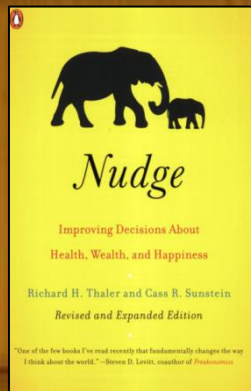
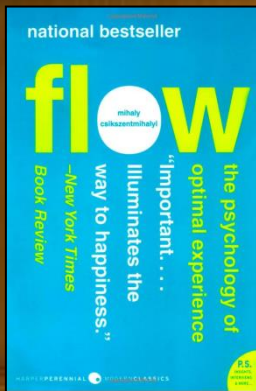
RunKeeper 'Congratulations!' screen showing a new personal record. The screen displays the text 'Congratulations! You just achieved...' and 'New Personal Records'. It lists two records: 'Average pace in a week' and 'Average pace in a month'. A red arrow points to the 'Average pace in a month' record. Below the records is a 'Share' button. At the bottom is a 'View Activity' button.

No! This experience undermines the fun of Runkeeper. How can I ever break this record?

TALK
CONCLUSION

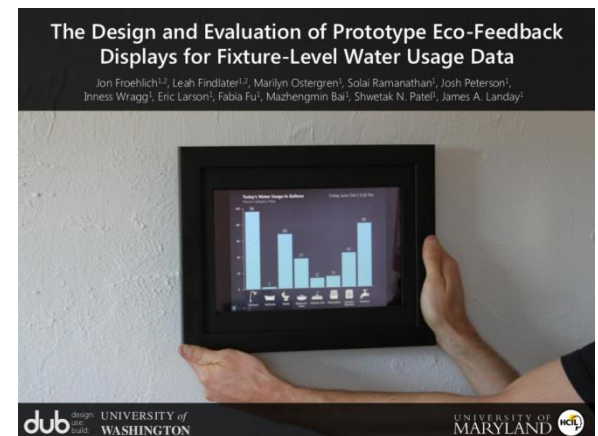
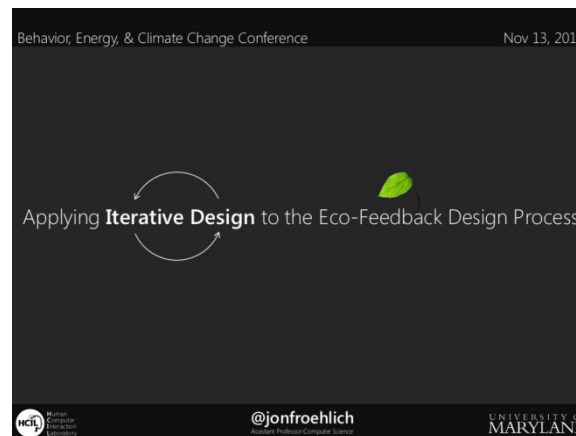
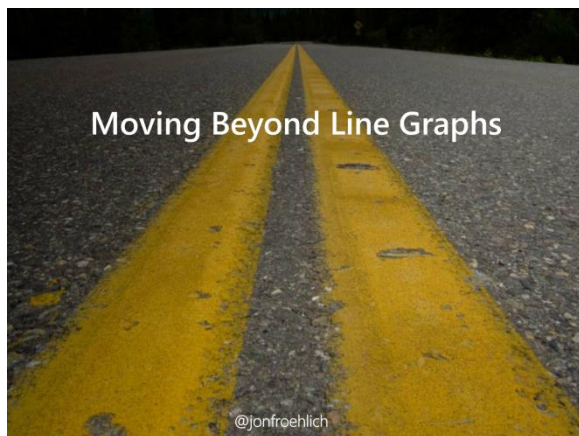
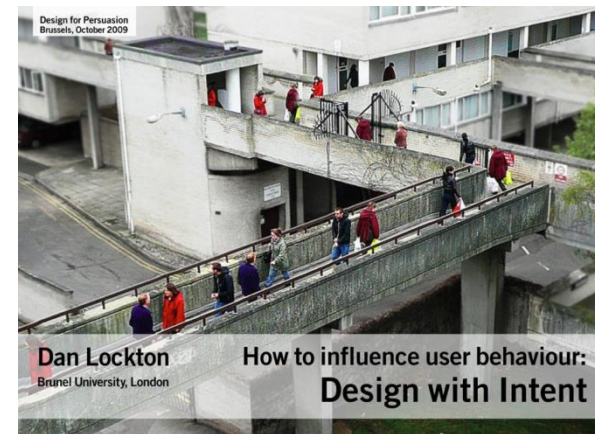


Some useful books





Some **inspiring/useful** talks



Some **helpful design cards**

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Positive Affirmation



What examples are you setting or showing on your site
to let people know what is the normal (or intended)
behavior? In social contexts, find and reward people who
model "good" behavior. In other cases, what examples
can you provide to demonstrate positive interactions?
Simply observing how we should conduct ourselves can
encourage positive behaviors.

*See also: Reputation, Social Proof, Feedback Loops,
Status, Showing*

Dan Lockton
@danlockton



Design with Intent

101 patterns for influencing behaviour through design

Free download from danlockton.co.uk

About



Me in under 140 characters

Sebastian Deterding designs and researches playfulness and persuasion in digital media.

Short Bio

Sebastian Deterding is a designer and researcher working on persuasive and gameful design (or »gamification«), user experience and video games. He is broadly interested in how code shapes conduct – and how to put that knowledge into practice.

He is a PhD researcher in communication research at the graduate school of the [Research Center for Media and Communication](#), Hamburg University, supported by a grant of the [Hamburg Federal Initiative of Research Excellence](#). His thesis looks into the use of game design elements to motivate behaviour in non-game contexts. He is also an affiliated researcher at the [Hans Bredow Institute for Media Research](#) in Hamburg, and works as an independent user experience designer. Recent clients include the BBC, Greenpeace, Omnicom Group, Otto, Xing and Schibsted, as well as several startups.

He speaks internationally at venues like [LIFT](#), [Interaction](#), [CHI](#), [Web Directions](#), and [Playful](#), and his work on gameful design has been covered by [The Guardian](#), [The New Scientist](#), the [Los Angeles Times](#) and [EDGE Magazine](#) among others.

Previously, he worked as user experience designer at Europe's largest magazine publisher, [Grunert+Jahr](#), and as Program Manager Multimedia at the German [Federal Agency for Civic Education](#).



The Gameful World
Book, MIT Press



Rules of Order
presentation, CPDP



9,5 Theses on Gamification
presentation, MSR, RIT



Paideia as Paidia
keynote, gls 8.0



Ruling the World
presentation, lift 12



The MAO Model
presentation, interaction 12



Moral persuasion
TED talk, presentation



Don't Play Games With Me!
keynote, web directions @ media '11



Gamification Research Network
project



There Be Dragons
presentation



Meaningful Play
presentation, google tech talk



Pawned.
presentation, playful 2010



Just add points?
presentation



»Das Internet ist dezentral.«
presentation



stern.de
project



Living Room Wars
book chapter



Fiction As Play



You (can) do (better)

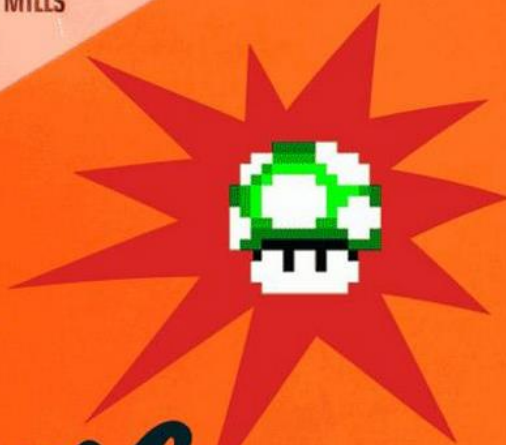


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Persuasive Design

GENERAL  MILLS



Game
Kix

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Approaches, Issues, Applications

A book questioning playful and gameful design and their ramifications for society, politics, ethics, design, and individuals. Edited by [Steffen P. Walz](#) and [Sebastian Deterding](#), to appear with [MIT Press](#) in 2013.

Sign up to get a single e-mail when the book is ready

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DRAFT CHAPTER FOR THE BOOK: The Gameful World - <http://www.gamefulworld.org/>

GAMIFYING GREEN:

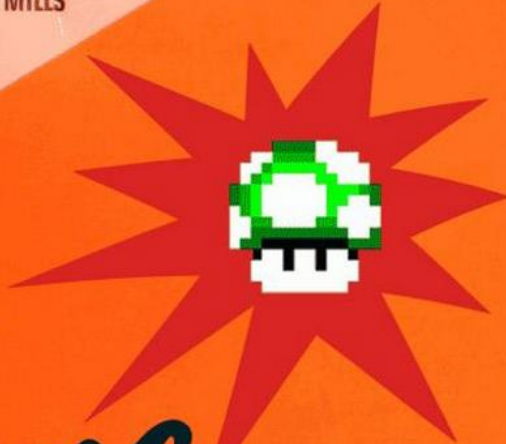
Surveying and Situating Green Gamification
for Environmental Sustainability

This is a draft chapter for the forthcoming book *The Gameful World*. Some content subject to change. Note: the pagination, article double spacing, figure and table placement are for draft purposes and will be handled by the publisher for final print version.

Please cite as:

Proehlrich, J. (2013). Gamifying Green: Surveying and Situating Green Gamification for Environmental Sustainability. In Walz, S. and Deterding, S. (Eds.). *The Gameful World*. MIT Press. To Appear.

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GAMIFYING GREEN

JONFROEHLICH

ASSISTANT PROFESSOR CS

30TH ANNUAL HCIL SYMPOSIUM

MAY 22 2013



ACHIEVEMENT UNLOCKED

You made it through my talk!

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