

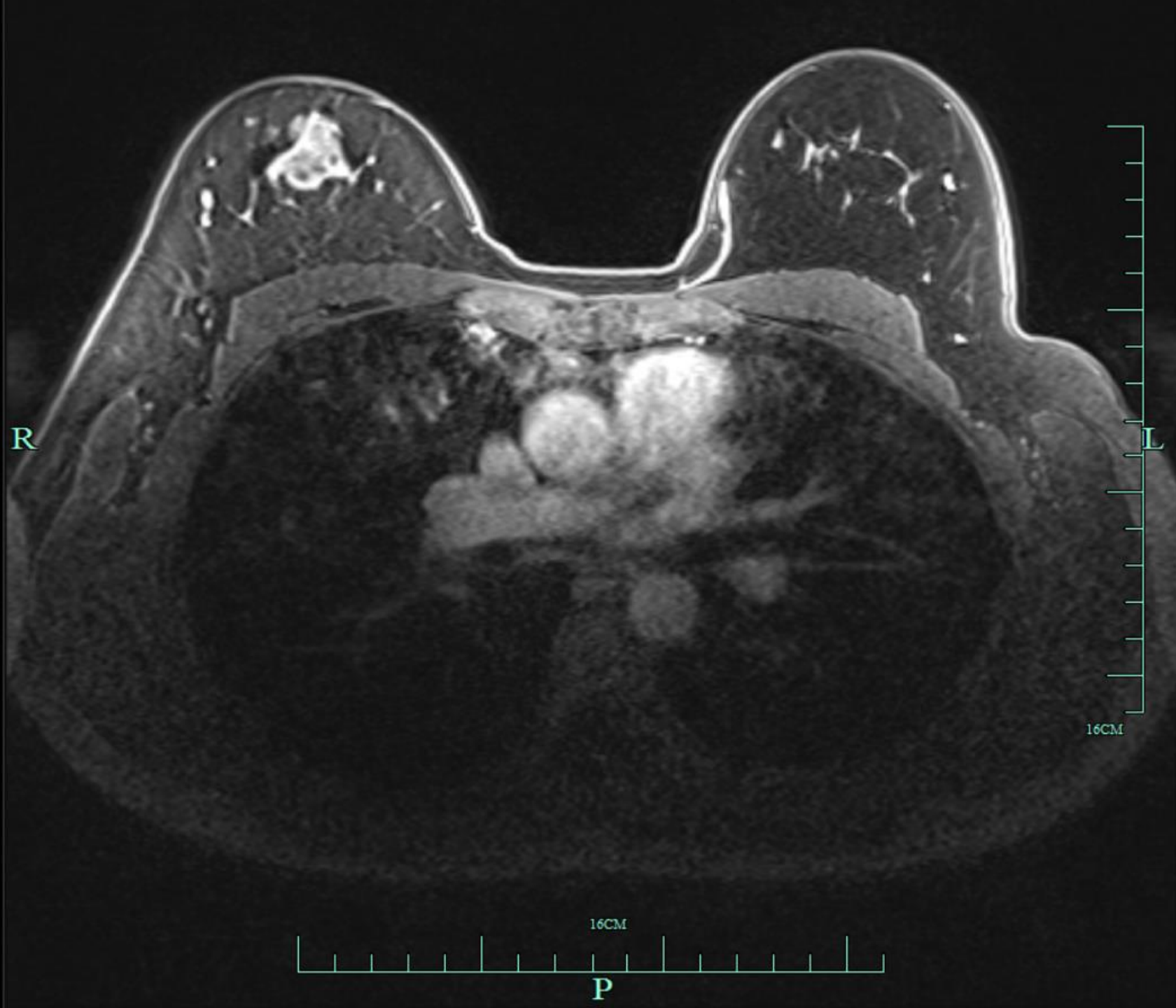
Risk, Reward & Addiction:

**How gamification
compels us to
gamble with our
lives**

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Games Institute
University of Waterloo

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SSHRC  CRSH



My initial risk of developing cancer by 30 (by gender & age in Canada) = 0.0167%

Survival chances (5 years) for breast cancer: 88%

Individualized 2.0 BOADICEA risk calculation results for developing new, secondary cancers by age 40:

Breast cancer: 26%

Ovarian cancer: 2.5%

...by age 80:

Breast cancer: 83%

Ovarian cancer: 44%

-LIFE-





1UP

Date/Time	Description	Reg C	Perf C	Result	Unit/Specimen	Abn	Ref int/Acc
Feb 05 2014 15:13	WBC	K	G	7.0	10^9/L		3.5-10.5
Feb 05 2014 15:13	HGB	K	G	134	g/L		115-155
Feb 05 2014 15:13	HCT	K	G	0.387	L/L		0.380-0.500
Feb 05 2014 15:13	RBC	K	G	4.45	10^12/L		3.50-5.00
Feb 05 2014 15:13	MCV	K	G	87.3	fL		80.0-100.0
Feb 05 2014 15:13	MCH	K	G	30.1	pg		25.0-34.0
Feb 05 2014 15:13	MCHC	K	G	346	g/L		315-355
Feb 05 2014 15:13	RDW	K	G	12.8	%		11.5-15.5
Feb 05 2014 15:13	PLAT	K	G	291	10^9/L		130-380
Feb 05 2014 15:13	MPV	K	G	10.9	fL		9.0-14.0
Feb 05 2014 15:13	Neutrophils	K	G	3.2	10^9/L		2.0-7.5
Feb 05 2014 15:13	Immature Granulocytes	K	G	0.2	10^9/L		< 0.1
Feb 05 2014 15:13	Lymphocytes	K	G	2.2	10^9/L		0.8-3.3
Feb 05 2014 15:13	Monocytes	K	G	0.5	10^9/L		0.1-1.0
Feb 05 2014 15:13	Eosinophils	K	G	0.1	10^9/L		0.0-0.5
Feb 05 2014 15:13	Basophils	K	G	0.0	10^9/L		0.0-0.1
Feb 05 2014 15:13	Na	K	G	139	mmol/L		136-145
Feb 05 2014 15:13	K	K	G	3.8	mmol/L		3.5-5.1
Feb 05 2014 15:13	Cl	K	G	101	mmol/L		98-107
Feb 05 2014 15:13	Carbon Dioxide	K	G	30	mmol/L		21-32
Feb 05 2014 15:13	Anion Gap	K	G	5	mmol/L		5-12
Feb 05 2014 15:13	Creatinine	K	G	56	umol/L		22-75
Feb 05 2014 15:13	Total Bilirubin	K	G	9	umol/L		3-17
Feb 05 2014 15:13	ALT	K	G	28	U/L		17-63
Feb 05 2014 15:13	ALP	K	G	81	U/L		50-136
Feb 05 2014 15:13	eGFR (MDRD)	K	G	110	mL/min		> 60

HURT? TIRED? SORE?

INSTA-HEALTH



FEELS GREAT!

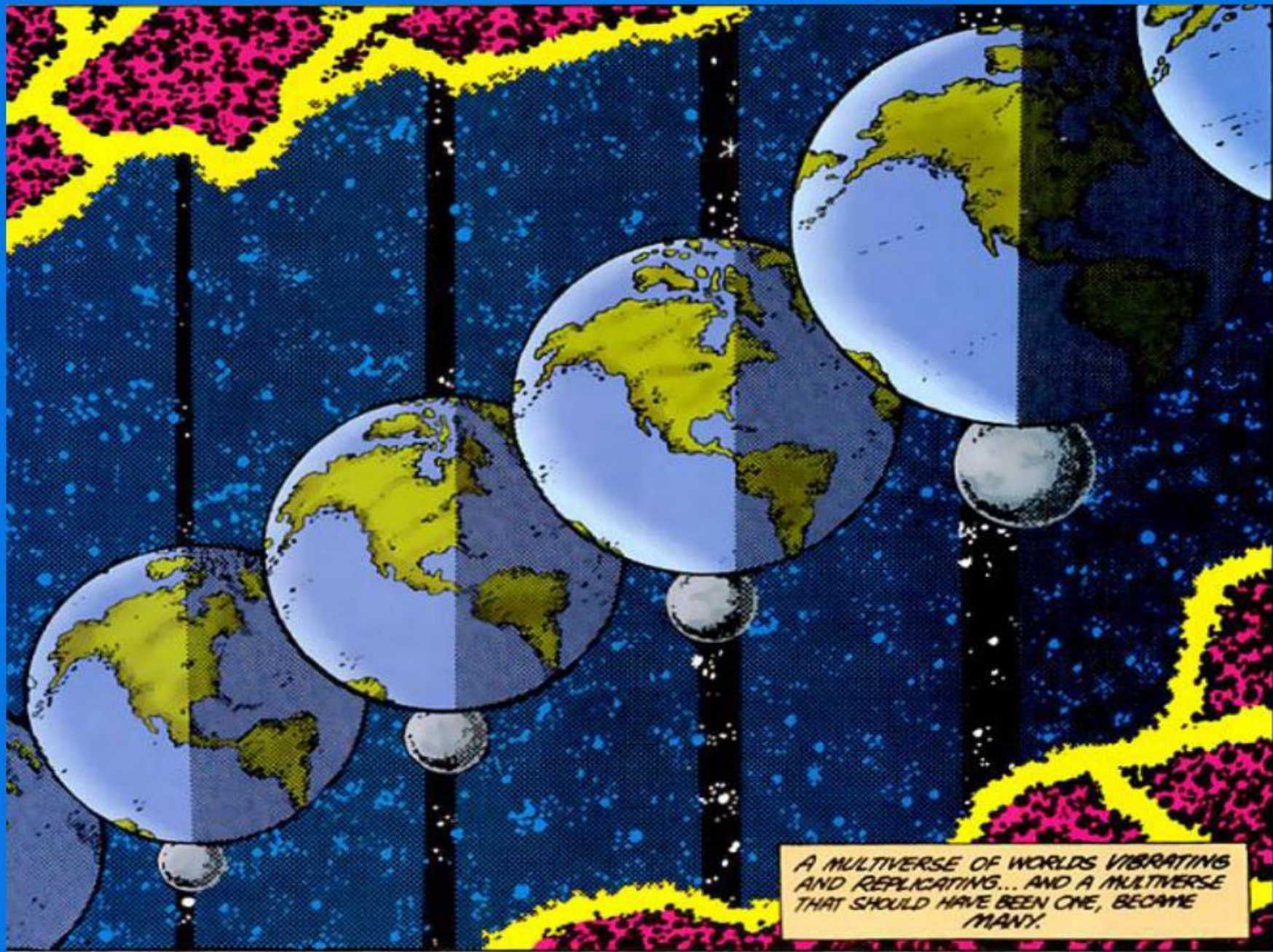
ONLY \$1.00
+ postage & handling

Who needs a real doctor when you got my machines and their scary needles?
-Dr. Zed

Come Get Your Fix Today!

*** END OF REPORT ***





A MULTIVERSE OF WORLDS VIBRATING
AND REPLICATING... AND A MULTIVERSE
THAT SHOULD HAVE BEEN ONE, BECAME
MANY.







current
5 year
survival:

75%.

25 dark
universes



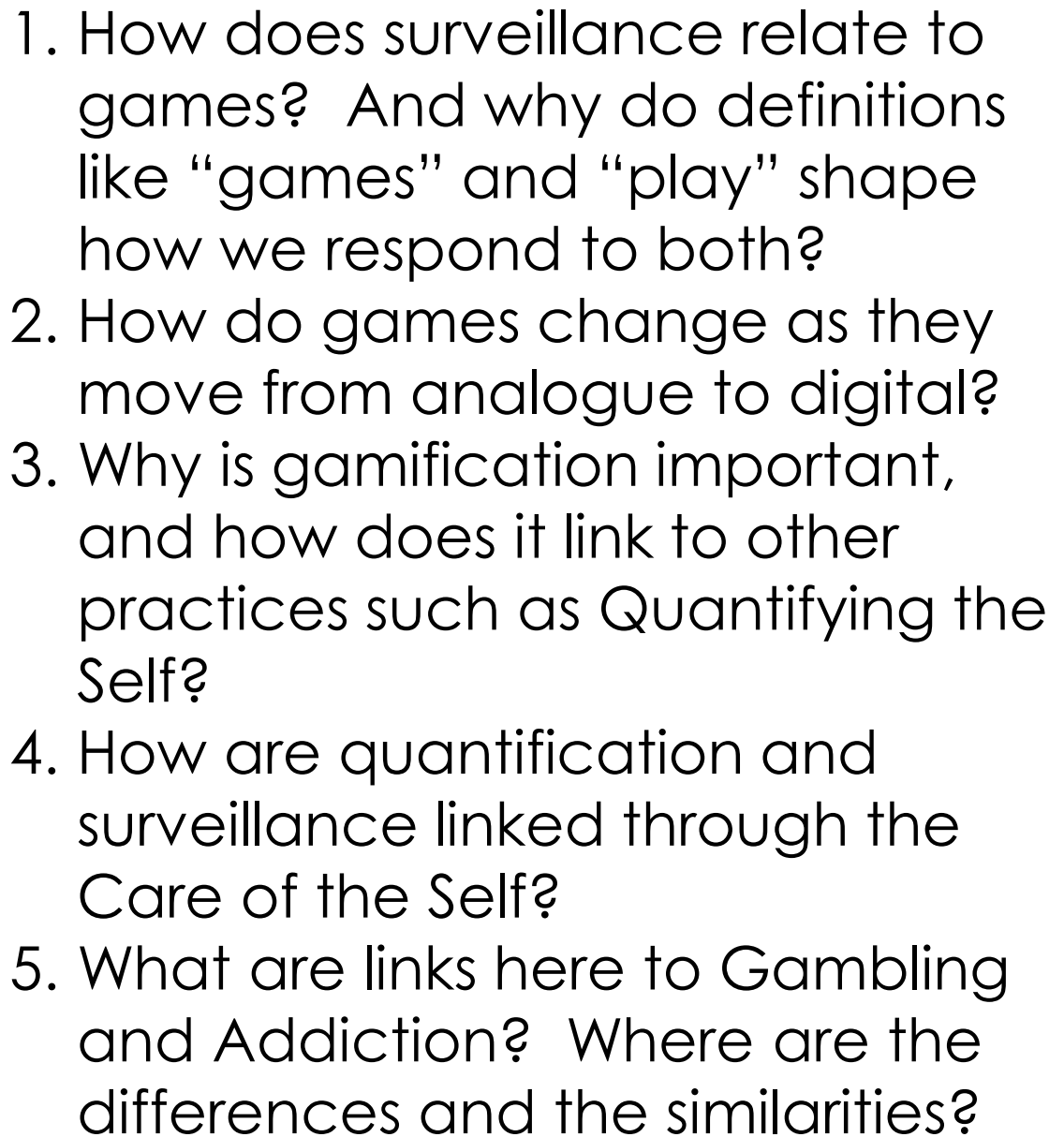
5 year
survival,
diagnosis,
but no
treatment
(for gen.
pop.)

4%



5 year
survival,
post-
treatment
(gen.pop):

88%





5 year
survival,
diagnosis,
but no
treatment
(for gen.
pop.)

4%







5 year
survival,
post-
treatment
(gen.pop):

88%



5 year
survival,
for Grade
3, triple
negative
cancer,
post-
surgery:

47%



A small percentage of Fitbit Force customers have reported skin sensitivity. [Learn more.](#)

< > Friday NOVEMBER 21

Steps

2k

1k

12AM 2 4 6 8 10 12PM 2 4 6 8 10 12AM



Daily



12,133 steps
Champl

Friends

Previous days aren't viewable for this tile.



2,159 calories



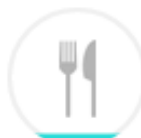
12.6 lbs
to go



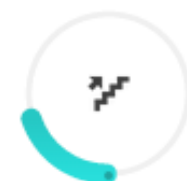
8.45 km
Champl



65 active mins
Champl



81 cals
left to eat



2 floors



8 hrs 25 min



under

1578 vs 2159



30,000 steps
Best in a day

Need motivation
to move more?

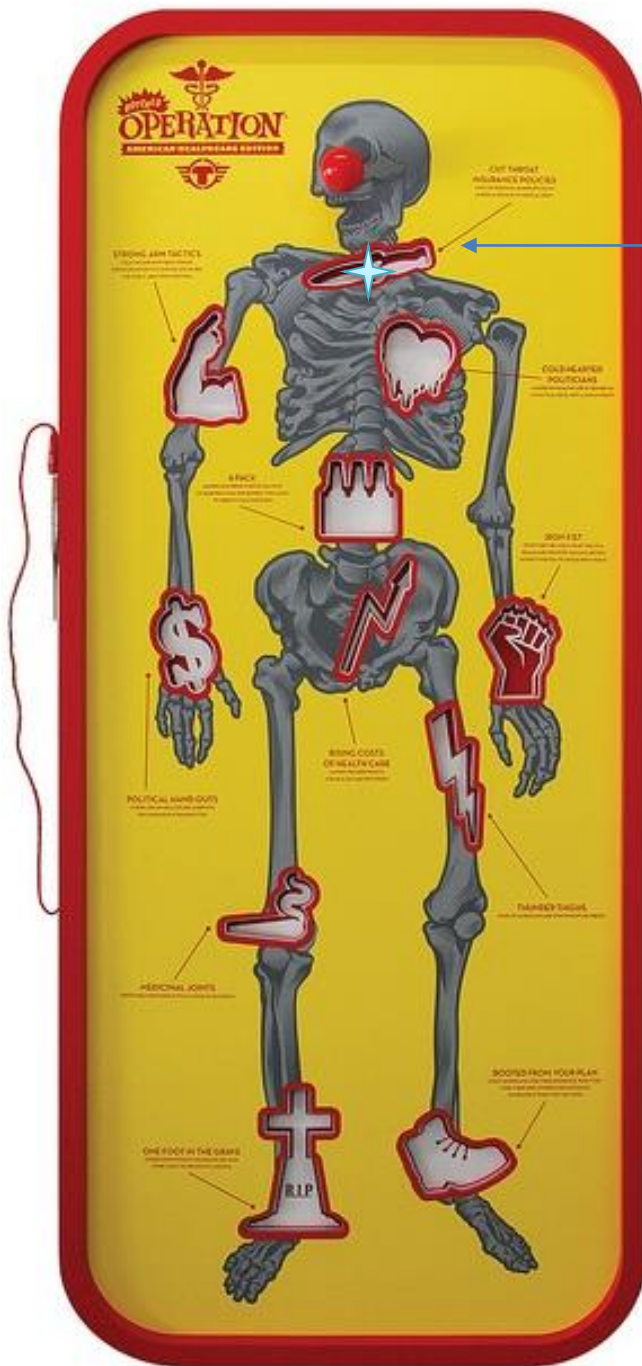
Increase your daily
activity with Fitbit
Premium.

Try now

No, thanks

Recent Exercise





1. How does surveillance relate to games? And why do definitions like “games” and “play” shape how we respond to both?
2. How do games change as they move from analogue to digital?
3. Why is gamification important, and how does it link to other practices such as Quantifying the Self?
4. How are quantification and surveillance linked through the Care of the Self?
5. What are links here to Gambling and Addiction? Where are the differences and the similarities?

Risk and fear of victimization are key lenses for viewing surveillance





A small percentage of Fitbit Force customers have reported skin sensitivity. [Learn more.](#)

< > Friday NOVEMBER 21

Steps

2k

1k

12AM 2 4 6 8 10 12PM 2 4 6 8 10 12AM



Daily



12,133 steps
Champl

Friends

Previous days aren't viewable for this tile.



2,159 calories



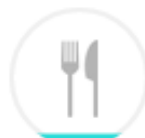
12.6 lbs
to go



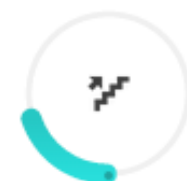
8.45 km
Champl



65 active mins
Champl



81 cals
left to eat



2 floors



8 hrs 25 min



under

1578 vs 2159



30,000 steps
Best in a day

Need motivation
to move more?

Increase your daily
activity with Fitbit
Premium.

Try now

No, thanks

Recent Exercise





Hello Julia

Your Current Level is: **BRONZE**



Your Level

Your Current Level:	BRONZE	?
Points to next level	500	?
Total points earned	0	?

Claim cash bonus

Available points	0	?
------------------	---	---

You can claim cash bonuses at your current level and all of the lower levels providing you have enough available points to spend.

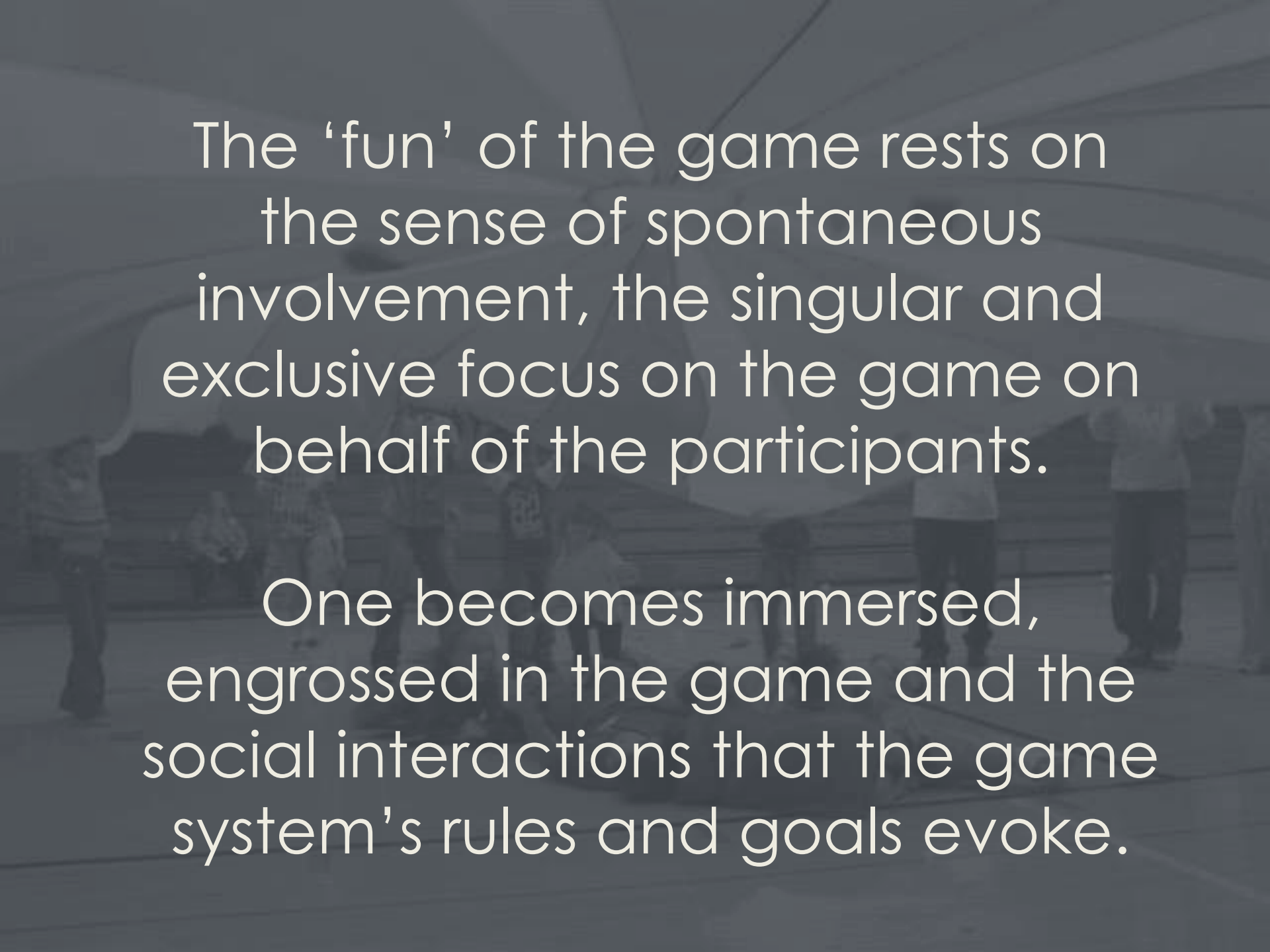
Claim cash bonus

Points Level	Cash Bonus (EUR)	Cost (points)	Convert
BRONZE	8	400	Claim
SILVER	40	1500	Claim
GOLD	200	7000	Claim
	400	10000	Claim
VIP	1200	20000	Claim
	4100	60000	Claim
	16500	150000	Claim

A **game** is an activity defined by rules in which players try and reach some sort of goal.

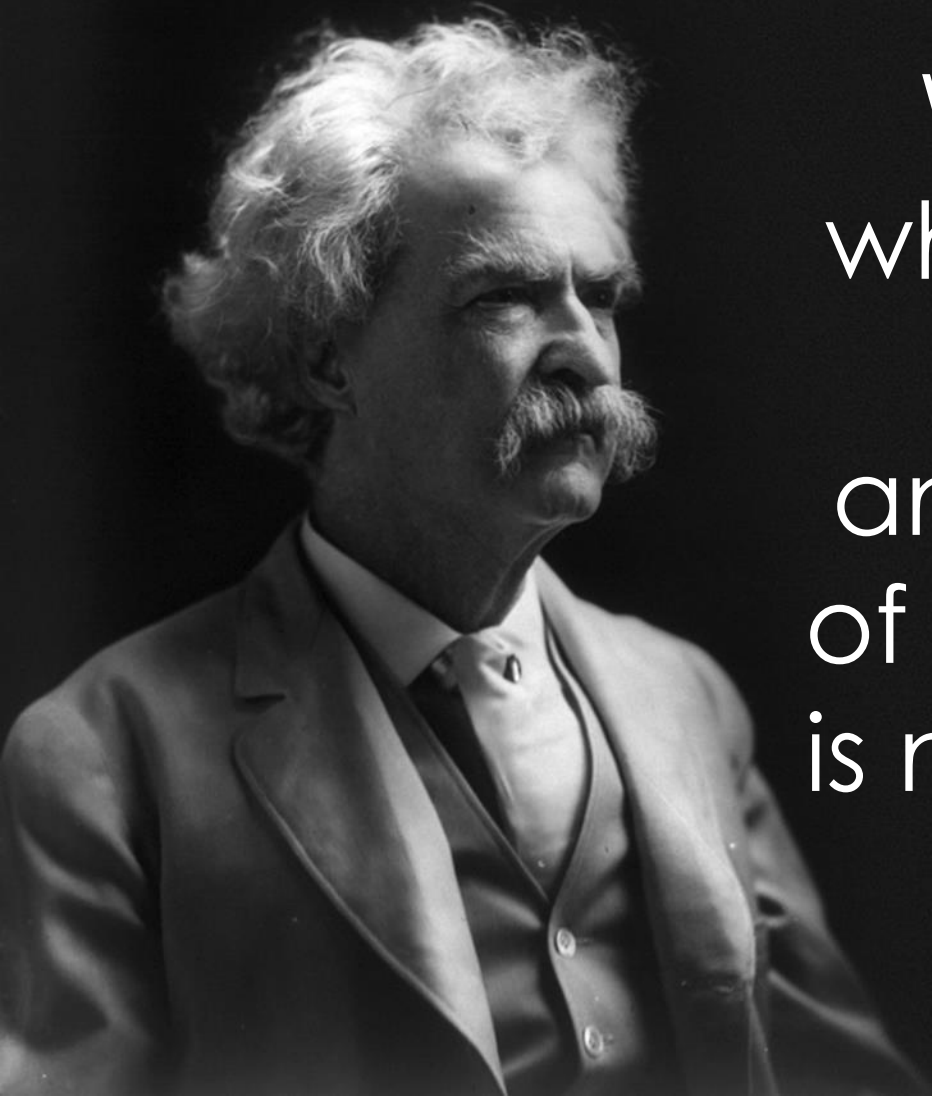
Play is 'free movement within a more rigid structure'. Play emerges both *because of* and *in opposition* to more rigid structures, such as rules.



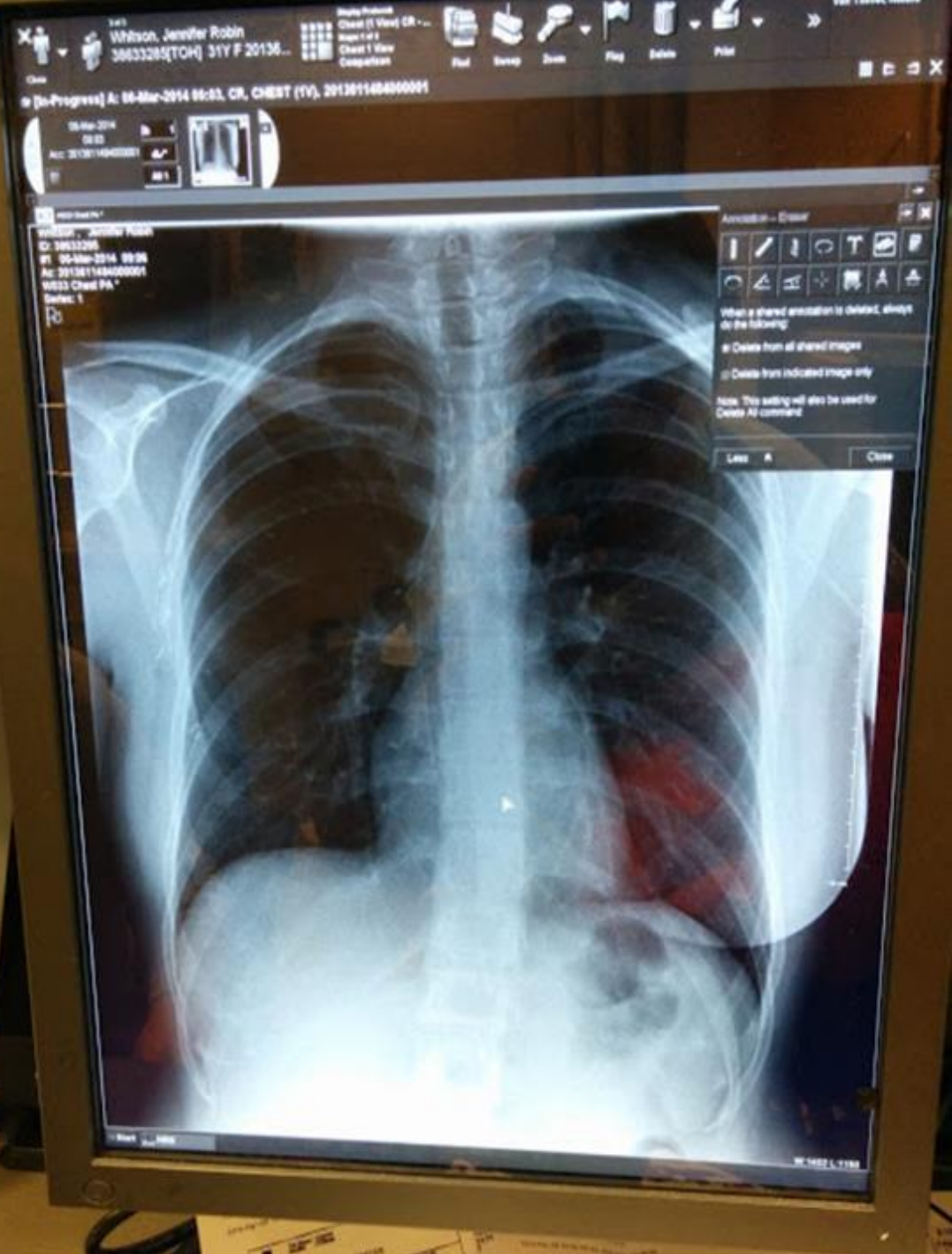
A group of children are playing basketball on a court. The image is in grayscale and has a dark, semi-transparent overlay. The children are in various positions on the court, some standing and some in motion. The text is overlaid on the upper half of the image.

The 'fun' of the game rests on
the sense of spontaneous
involvement, the singular and
exclusive focus on the game on
behalf of the participants.

One becomes immersed,
engrossed in the game and the
social interactions that the game
system's rules and goals evoke.



Work consists of
whatever a body is
obliged to do,
and... Play consists
of whatever a body
is not obliged to do.





5 year
survival,
for Grade
3, triple
negative
cancer,
post-
surgery:

47%



5 year
survival,
for Grade
3, triple
negative
cancer,
post-
chemo:

70%



Top Badges



10,000 steps

Next up: 15,000 steps

Today Week **Month** Year

◀ Apr 01 - 30, 2014 ▶

Steps Distance Floors Calories burned



Totals

177,159 steps

142 floors

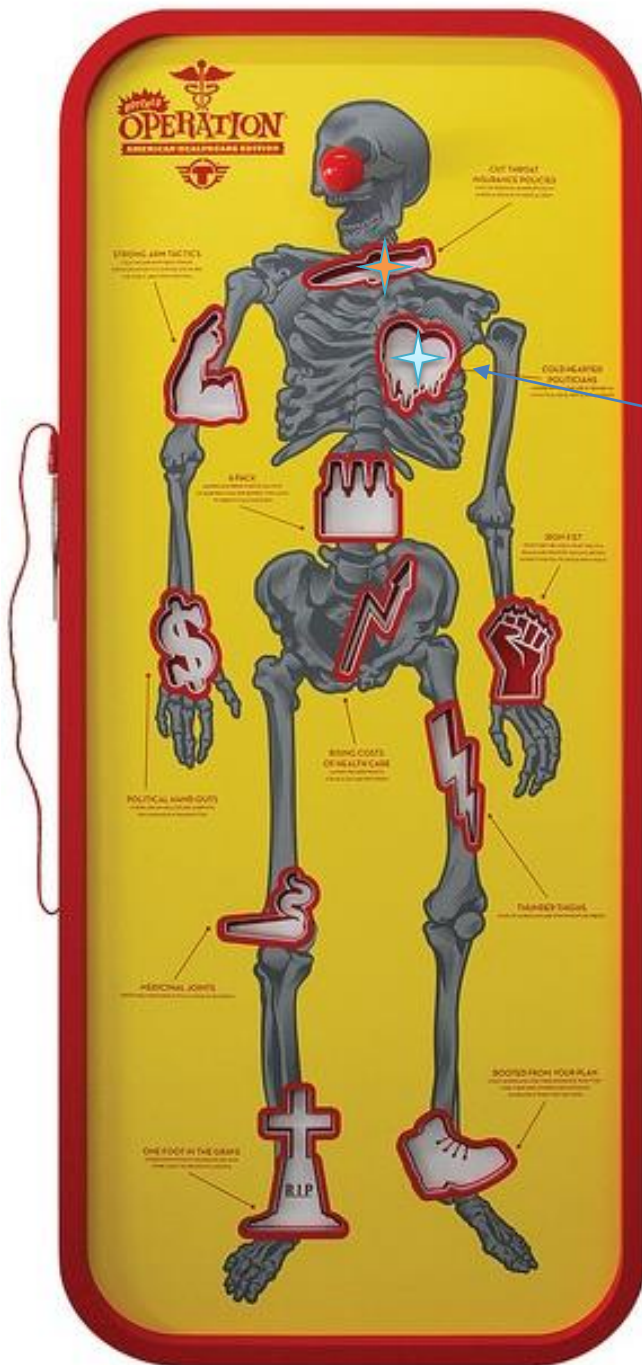
124.76 km

54,733 calories

fitbit

fitbit

the competition



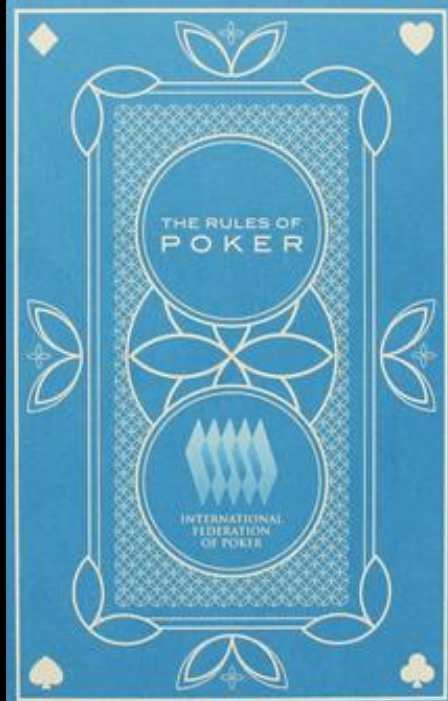
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2. **How do games change as they move from analogue to digital?**
3. Why is gamification important, and how does it link to other practices such as Quantifying the Self?
4. How are quantification and surveillance linked through the Care of the Self?
5. What are links here to Gambling and Addiction? Where are the differences and the similarities?
6. How do we successfully critique gamification and similar actuarial practices of governance that are masked by “play”?

“Free” play in analog space

Rules are locally negotiated. This takes substantial effort.



Games change form, moving from analog to digital



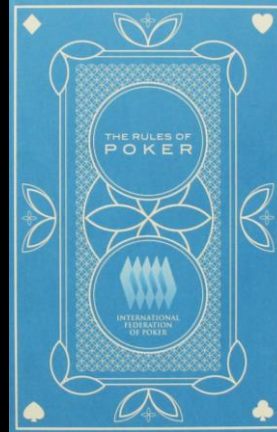
“Free” play in analog space

Rules are locally negotiated. This takes substantial effort.



Structured play in analog space

Rules are standardized and homogenized.



Games change form, moving from analog to digital

BALANCE

\$93.36

BET

\$0.50

WIN

\$170.30

You won on 50 lines

You won \$1.80 on Line 4

MINOR JACKPOT

\$817.89

50 Lines Selected

5**FREE GAMES
REMAINING****MAJOR JACKPOT**

\$3,050.85

\$0.01 Bet Per Line

**AUTOPLAY****BET****SPIN**

\$93.36

Balance

Cashier

Menu

Help

Back

“Free” play in analog space

Rules are locally negotiated. This takes substantial effort.



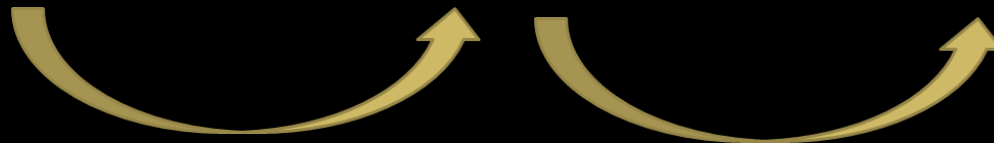
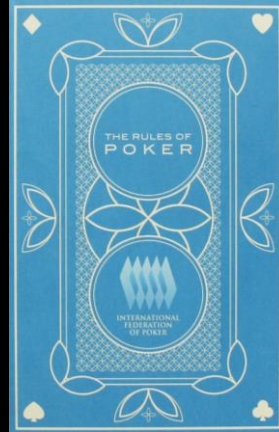
Structured play in analog space

Rules are standardized and homogenized.



Digital Play

Rules are hidden within the black box of technology.



Games change form, moving from analog to digital





English



24/7 Support Live Help



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– valid from 7 March 2012

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**TABLE
GAMES**
22 GAMES

BLACKJACK
44 GAMES

**VIDEO
POKER**
58 GAMES

SLOTS
255 GAMES

Winners

COME PLAY WITH US & WIN



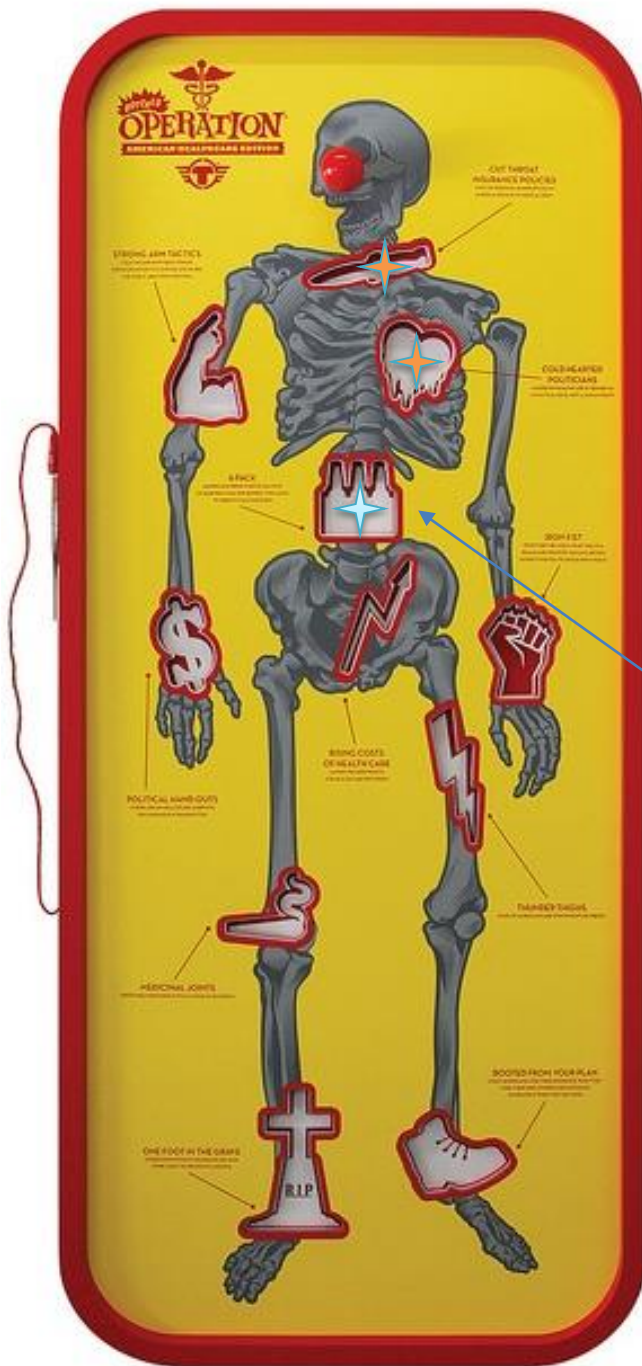
"I keep checking my
bank balance to remind
myself this is real!
Thank you so much!"

Eric M. won €25,500
on Bars and Stripes
Video Slot!

Jackpots Paying: \$ 3,756,143.47

Registered Players: 4,086,531

Progressive Jackpots



1. How does surveillance relate to games? And why do definitions like “games” and “play” shape how we respond to both?
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Recent usage
Historical usage
Take action
Settings

Usage analysis for John

What type of home is this?
Approximately how large is this home?

777 W Daily average
400 W Always-on daily average
36% Always-on usage

You have earned the following badges



Single Family Home Edit
1000-2

You earned 0 new pieces of fruit. You have 10 total.



@ Syracuse U. unwrapped the Foody Call badge



Conrad G.
@ Syracuse



Jennife
@ U. of Sou

Hi admin Log out



Level Newbie
Total points 25 XP



You checked in for today!

My awards | Leaderboard



Gym Junkie



Instigator



Big new



Glamor



GetGlue

getglue.com

Gamification:
the use of game elements in non-game contexts

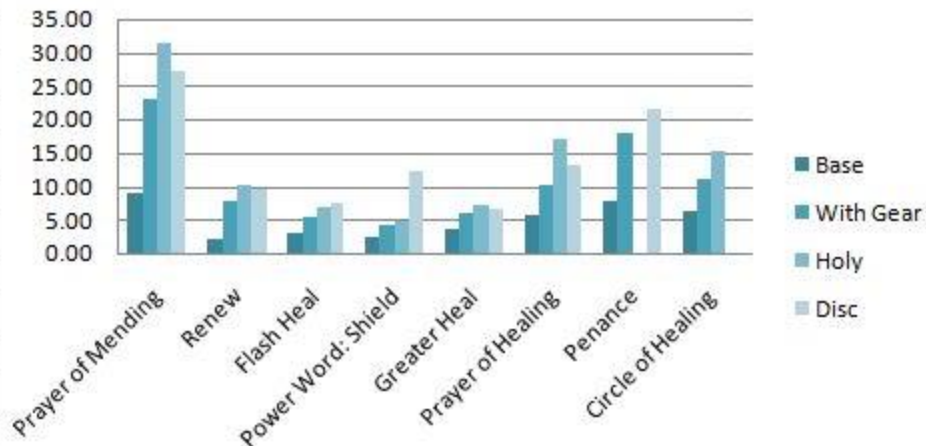


Spell Name	Cost(%bm)	Mana Cost	Avg Heal	Coefficient
Prayer of Mending	15%	579	1043	80.68%
Renew	17%	657	1400	188.00%
Flash Heal	18%	695	2040	80.68%
Power Word: Shield	23%	888	2230	80.68%
Greater Heal	32%	1236	4270	161.35%
Prayer of Healing	48%	1854	2150	80.68%
Penance	16%	618	1580	105.71%
Circle of Healing	21%	811	1008	40.20%

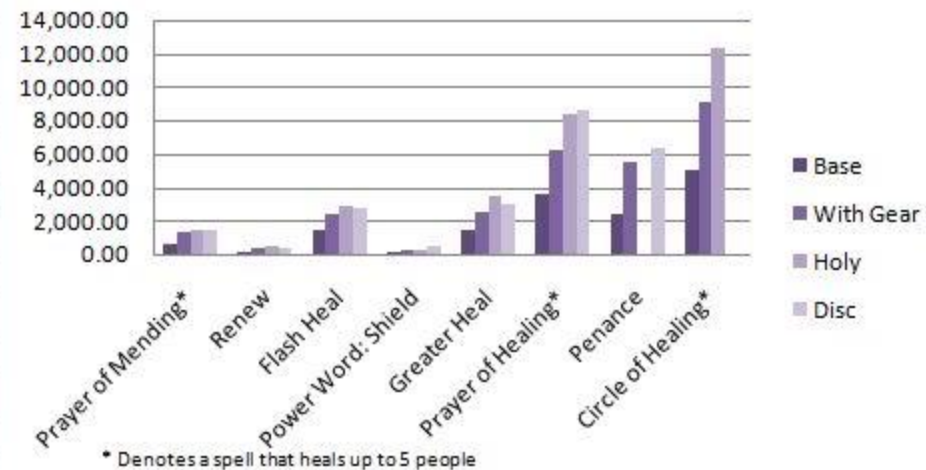
Mana Efficiency (hpm)				
Spell Name	Base	With Gear	Holy	Disc
Prayer of Mending	9.01	22.94	31.49	27.29
Renew	2.13	7.85	10.29	9.46
Flash Heal	2.94	5.26	6.81	7.52
Power Word: Shield	2.51	4.33	4.71	12.12
Greater Heal	3.45	6.07	7.06	6.51
Prayer of Healing	5.80	10.15	16.96	13.08
Penance	7.67	17.93	N/A	21.46
Circle of Healing	6.21	11.17	15.27	N/A

Speed Efficiency (hps)				
Spell Name	Base	With Gear	Holy	Disc
Prayer of Mending*	521.50	1,328.30	1,458.68	1,422.17
Renew	93.33	344.00	432.73	372.93
Flash Heal	1,360.00	2,435.73	2,838.40	2,779.29
Power Word: Shield	148.67	256.24	278.54	430.36
Greater Heal	1,423.33	2,499.00	3,489.60	3,050.04
Prayer of Healing*	3,583.33	6,272.67	8,387.20	8,602.34
Penance	2,370.00	5,541.30	N/A	6,348.83
Circle of Healing*	5,040.00	9,060.00	12,384.00	N/A

Mana Efficiency (hpm)



Speed Efficiency (hps)



* Denotes a spell that heals up to 5 people

theory-crafting in WoW by powergamers

Both games and gambling
are about risk –

attuning to in-game risk to
replace other, more
unmanageable risks.

Most people define gambling as pure chance, where you don't know the outcome. But at the machines I do know: either I'm going to *win*, or I'm going to *lose*. I don't care if it *takes* coins, or *pays* coins: the contract is that when I put a new coin in, get five new cards, and press those buttons, I am allowed to *continue*.

So it isn't really a gamble at all—in fact, it's one of the few places I'm certain about anything. If I had ever believed that it was about chance, about variables that could make anything go in any given way at any time, then I would've been scared to death to gamble. *If you can't rely on the machine, then you might as well be in the human world where you have no predictability either.*

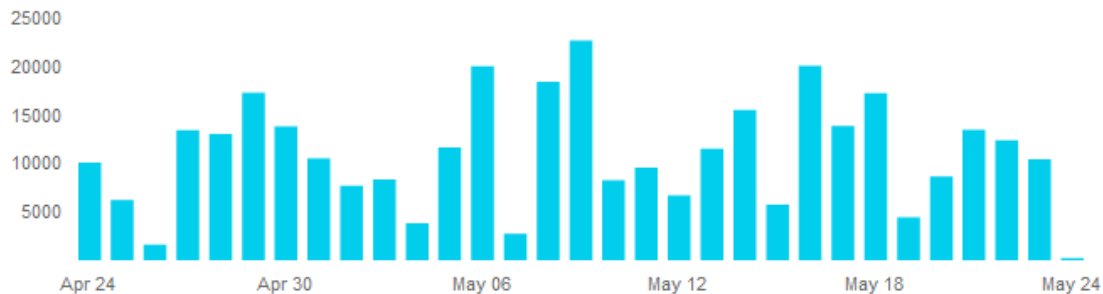
Sharon – (Schüll, pg. 12)

Steps

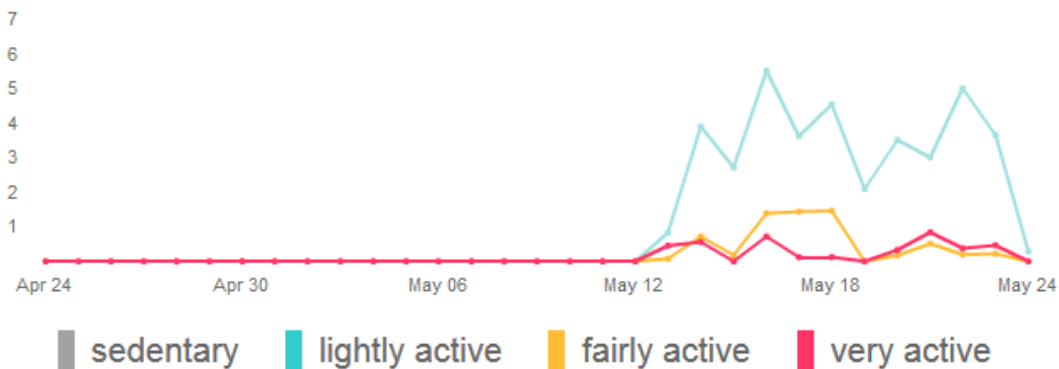
Distance

Floors

30 day graph



30 day graph of time active (in hours)



My Achievements

Lifetime

Best

3,829,639 steps

total lifetime steps



Top Badges



My Friends

Daily step average based on previous 7 days.



Aron



See All (1)



Find Friends



Quantified Self

Complete Guide to Self-Tracking

Login with:   Login

Tools

Members

Search for tools, companies, members...

Go

Profile

Team

Suggest a Tool

Tags

[Android](#) (62)
[API](#) (10)
[energy](#) (28)
[fitness](#) (100)
[food](#) (41)
[gadget](#) (32)
[goals](#) (62)
[health](#) (139)
[iPhone](#) (136)
[learning](#) (12)
[lifeloggging](#) (96)
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[money](#) (25)
[mood](#) (46)
[networks](#) (1)
[productivity](#) (38)
[relationships](#) (12)
[sleep](#) (23)
[social](#) (70)

Welcome to the Complete QS Guide to Self-Tracking!

Here you will find tools, apps, and projects that are tagged, rated, and reviewed by the global Quantified Self community (that includes you!) This guide is funded by the Robert Wood Johnson Foundation Pioneer Portfolio, which supports bold ideas at the cutting edge of health and health care, in partnership with Institute for the Future. Our goal is to gather and organize the world's collective self-tracking resources in one place, in a way that is useful and encourages collaboration between self-tracking experts and beginners who are just starting out. Dive in now and explore some of the [Tools](#) or [Members](#) who are part of this site...

What's New



[MyFitnessPal](#)

MyFitnessPal is a health and fitness community with easy to use tools to track your nutritional intake and exercise...



[Run Coach Pro](#)

Training plans and tracking for running events....



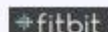
[Lumosity.com](#)

What's Hot

 [DailyBurn](#)

[DailyBurn](#)

A decent app, which ties in nicely with their website. It won't let you export your data, though, so...

 [Fitbit](#)

[Fitbit](#)

The fitbit is an outstanding tool. Activity tracking is very accurate. Sleep stats are also interesting - something I...

Highest Rated

 [CureTogether](#)

[CureTogether](#)

At CureTogether, patients around the world come together to share quantitative information on over 500 medical conditions. They share...



[Genomera](#)

Genomera helps people use personal data tracking, science, and collaboration to understand how their

Everyday (analog)
metering
reproduces
everyday life and
the construction of
social problems.

Quantification
allows for
aggregation and a
collective picture
of the social body.



Physical Assessment	*D	*ND
Temperature pm		
Pulse pm		
Respiration pm		
Blood Pressure pm		
Height pm		
Weight pm		
Chest sounds q visit		
02 Sat (if available)		
Asthma Control:	D	ND
Cough, wheeze or chest tightness (<4da/wk)		
Wake @night (<1/wk)		
Physical activity limited due to asthma		
Needs Reliever with exercise		
Needs Reliever (<4/wk)		
Exacerbations (hospital admit, ER visit, Walk-in Clinic) since last visit		
School/work absence since last visit		
Spirometry	D	ND
FEV 1 pre		
FEV 1 post		
FEV1 %change		
PEF pre		
PEF post		
PEF % change		
Review	D	ND
Definition of Asthma		
Action Plan - (ACP)		
Action Plan - (verbal)		
Med. Admin. Technique		
Warning signs		
Trigger factors		
Environmental control		
Coping strategies		
Medications		
Current		
Prescribed		
Monitor potential side effects	D	ND
height/osteoporosis, etc.		
Referrals	D	ND
Asthma Education Program		
Asthma Support Group		
Specialist		

OFFICE VISITS		PAGE #	CHART #
NAME	Amina Ali Jomel	INSURANCE NO.	
ADDRESS	75 Tiffany Road Mackham, ON	PHONE (Home)	(Work)
OCCUPATION	ESL student	DOB	1967-05-05
EMPLOYER		AGE	37
DATE / VITAL SIGNS	SUBJECTIVE	OBJECTIVE	ASSESSMENT
			PLANS
BP 130/85	37 y/o	CC: Cough + tightness in the chest	May - 2 - 2004
HT 163	WT 63	HPI: on & off Hx of cough, wheeze & chest	
P 78	T 37	tightness x 1 year. The symptom started	
		throughout but gradually and now is constant. 2 month ago	
		had ER admission for asthma exacerbation.	
		Highest cough especially disturbing for the Pt	
		she is on Salbutamol 2mg II / BID,	
		is helpful but not totally. She has allergy to	
		dust & ragweed, smoking also aggravate her symptom.	
		her husband smoke but outside the house.	
		she immigrated from Somalia 3-5 years ago	
		and can't recall such symptoms in the past.	
		⊙ Fever, night sweat, wt loss or fatigue, there is	
		very scanty phlegm with cough. There is also	
		some SOB w/ chest tightness. 2 mos. ago,	
		had spirometry & the result was equivocal.	
		PPD skin test was also less than 5mm.	
		CBC & BMP WNL .	
		PHH. w/ dx w/ TB at the age of 17 and was on TB meds.	
		for 1 year. Since then there has been no sign of TB return.	
		⊙ Rheumatic Fever at her teens as a result	
		has aortic & mitral dysfunction.	
		Obx. Gyn. Hx: Has 4 children, her past pregnancy	
		was also complicated with pregnancy induced DM.	
		She had 4 miscarriages 5 years ago.	
		FHX: Father died at 65 y/o because of gun shot wound	
		mother had DM.	
		Social Hx ⊙ Smoking, ⊙ ETOH, lives w/ her children &	
		husband in a supportive household. drug allergy, NKD	

Measurements make performances visible and thus reproducible.



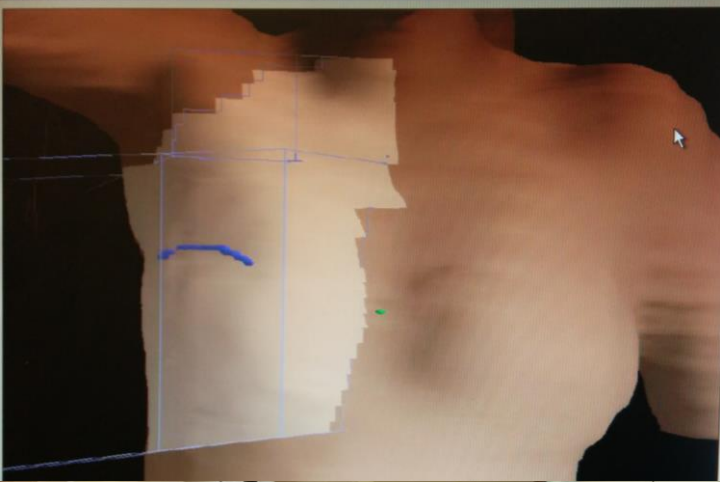
5 year
survival,
for Grade
3, triple
negative
cancer,
post-
chemo:

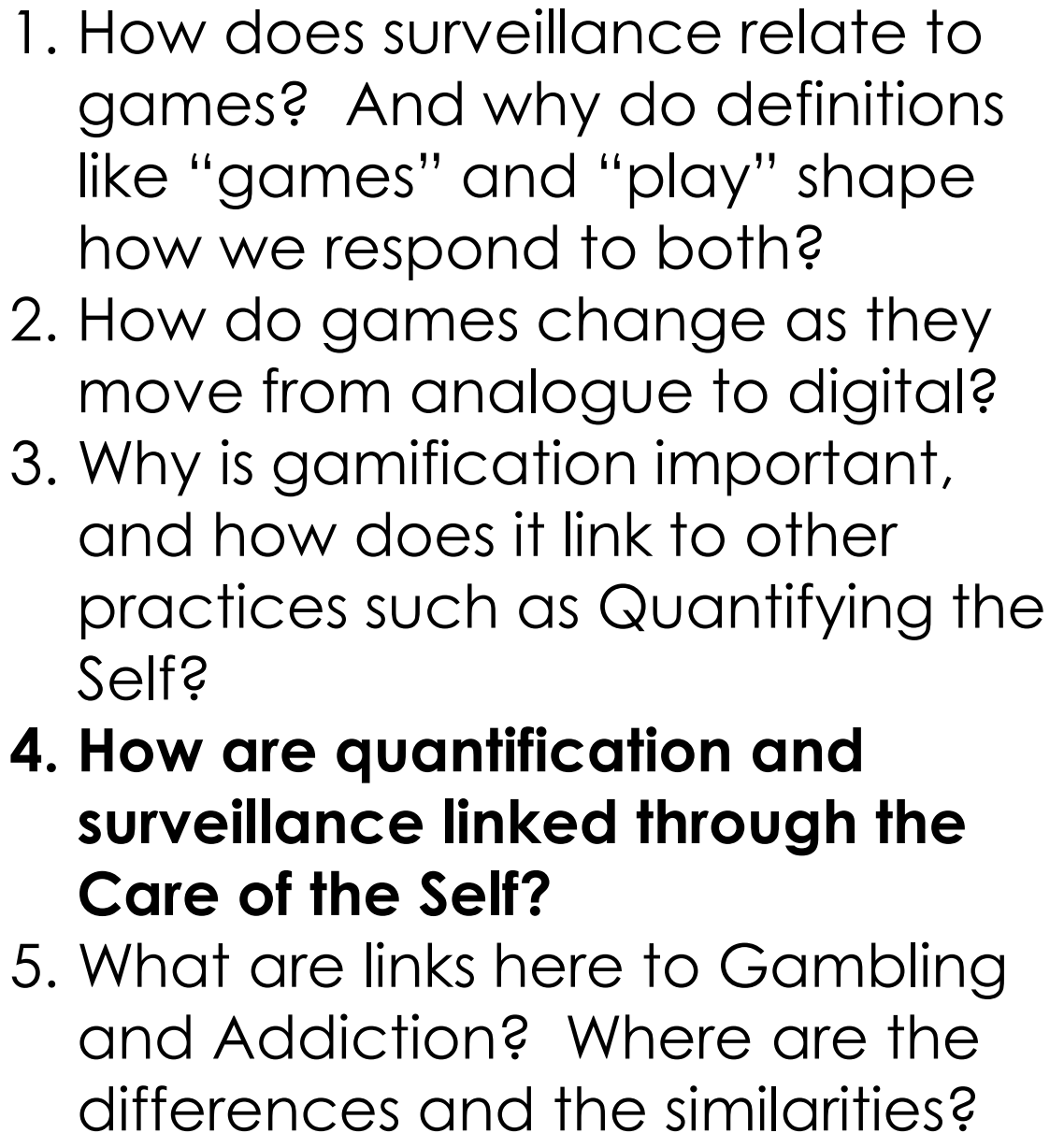
70%



5 year
survival,
for Grade
3, triple
negative
cancer,
post-
chemo,
post-
radiation:

75%





“We step on a scale and record our weight. We balance a checkbook. We count calories. But when the familiar pen-and-paper methods of self-analysis are enhanced by sensors that monitor our behavior automatically, the process of self-tracking becomes both more alluring and more meaningful.

Automated sensors do more than give us facts; they also remind us that our ordinary behaviour contains obscure quantitative signals that can be used to inform our behavior, once we learn to read them.”

Gary Wolf



↓
VS
↙

Activity (831)

Daily Steps (537)



Daily Climb (282)



Lifetime Climb (4)



Lifetime Distance (8)





Image: Jenny Tillotson

Technology allows us to measure what was previously immeasurable, and share what was previously private.



Highlights

- Real-time view of players' activity including their location on the floor
- Easily mountable **Player Tracking** hardware components independent of the slot machine type
- Do a full comp and points analysis
- Immediate overview of the best and worst players
- Exhaustive reporting and predictions on player spend
- Track points redemption, coupons and comps
- Integrated customer management system helps building better relationships with players and sales agents
- Segment players by different parameters
- Query database by specific marketing criteria and send direct mail to specific target groups
- Variety of bonus options (time, slot machine, player characteristic-specific promotions ...)
- Reward players with points earned by play and spent on different games, locations and time periods
- Associate a player or a group of them to specific sales reps, track their spend and calculate the sales commission.
- Enables the optimization and efficient cost control of all the marketing costs
- Create time specific promotions such as Happy Hours

“Player value algorithms set calendars and budgets to predict when and how much a player can be expected to gamble, generating “behavior modification reports” that suggest what kinds of solicitations he or she might respond to. “

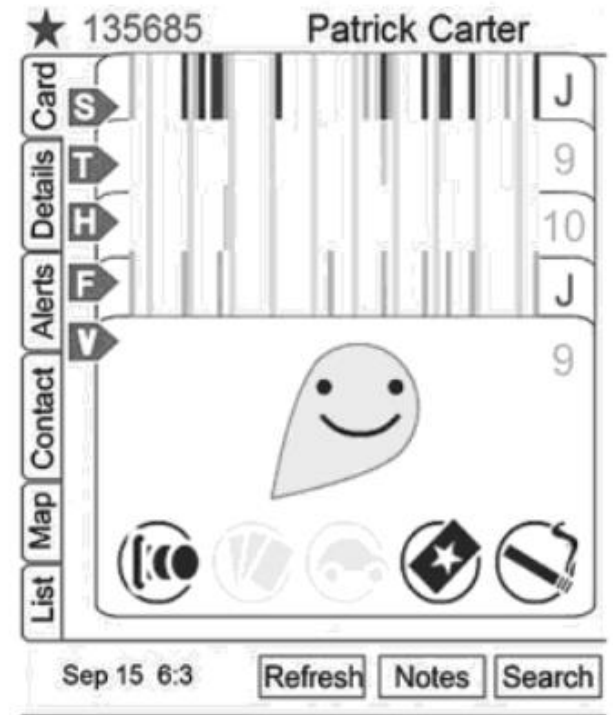
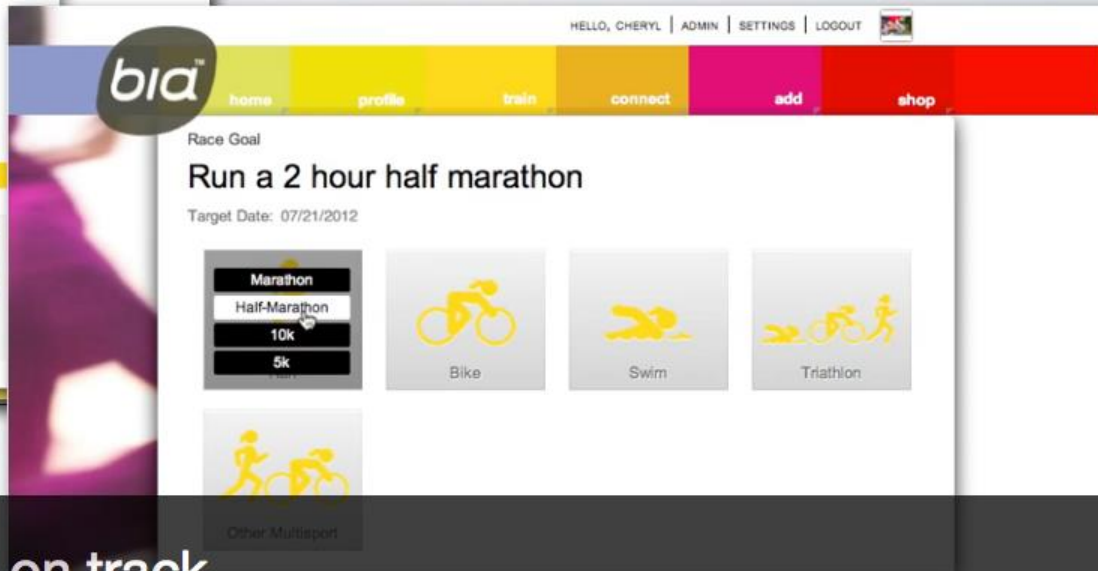
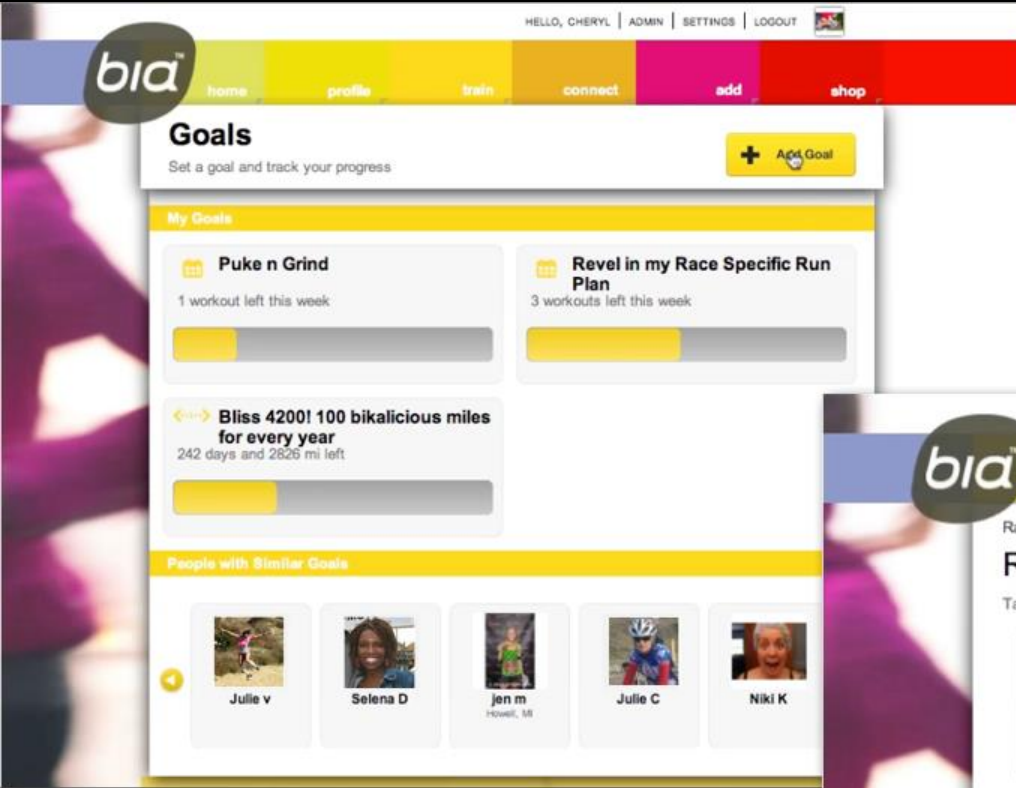


Figure 5.4. Micro SeePOWER, a handheld device that displays real-time “player value” data on its screen. Image from Bally’s behavioral intelligence demo CD, distributed at the Global Gaming Expo, 2007.



Image: Jenny Tillotson

Technology allows us to measure what was previously immeasurable, and share what was previously private.



set your goals and we'll keep you on track

Gamification makes the interiority of the body actionable by framing it as something to be measured, quantified and then acted on.



Games excel at providing actionable feedback, on a number of temporal scales, via visualizations.



REALITY

Worst game ever.

PLORF.com

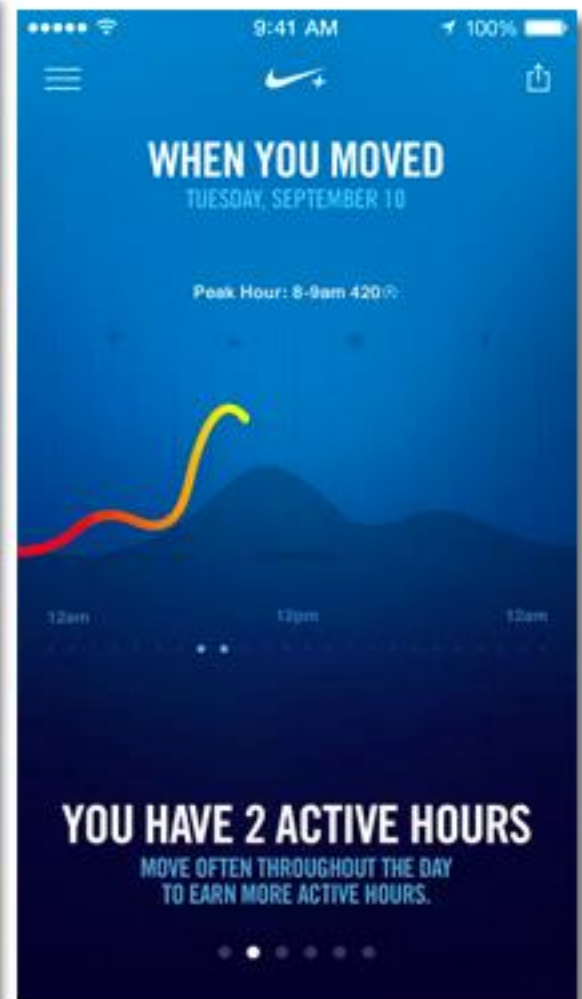




Exposing the minutiae of our
everyday lives and delving for
meaningful patterns

Using this data to improve
ourselves; and

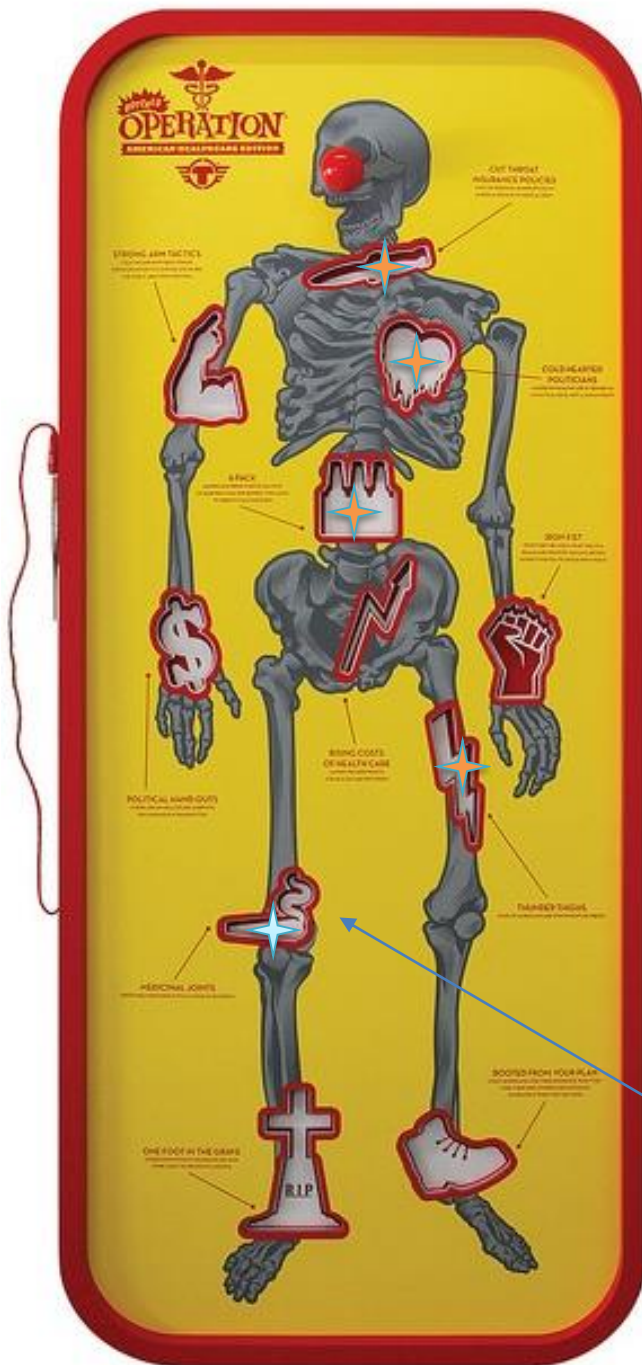
Inciting and maintaining
behaviour change by making this
self-improvement process more
pleasurable.



Gamified running apps use databases, automated value judgments, and “juicy” feedback mechanisms to stimulate desired behaviors.

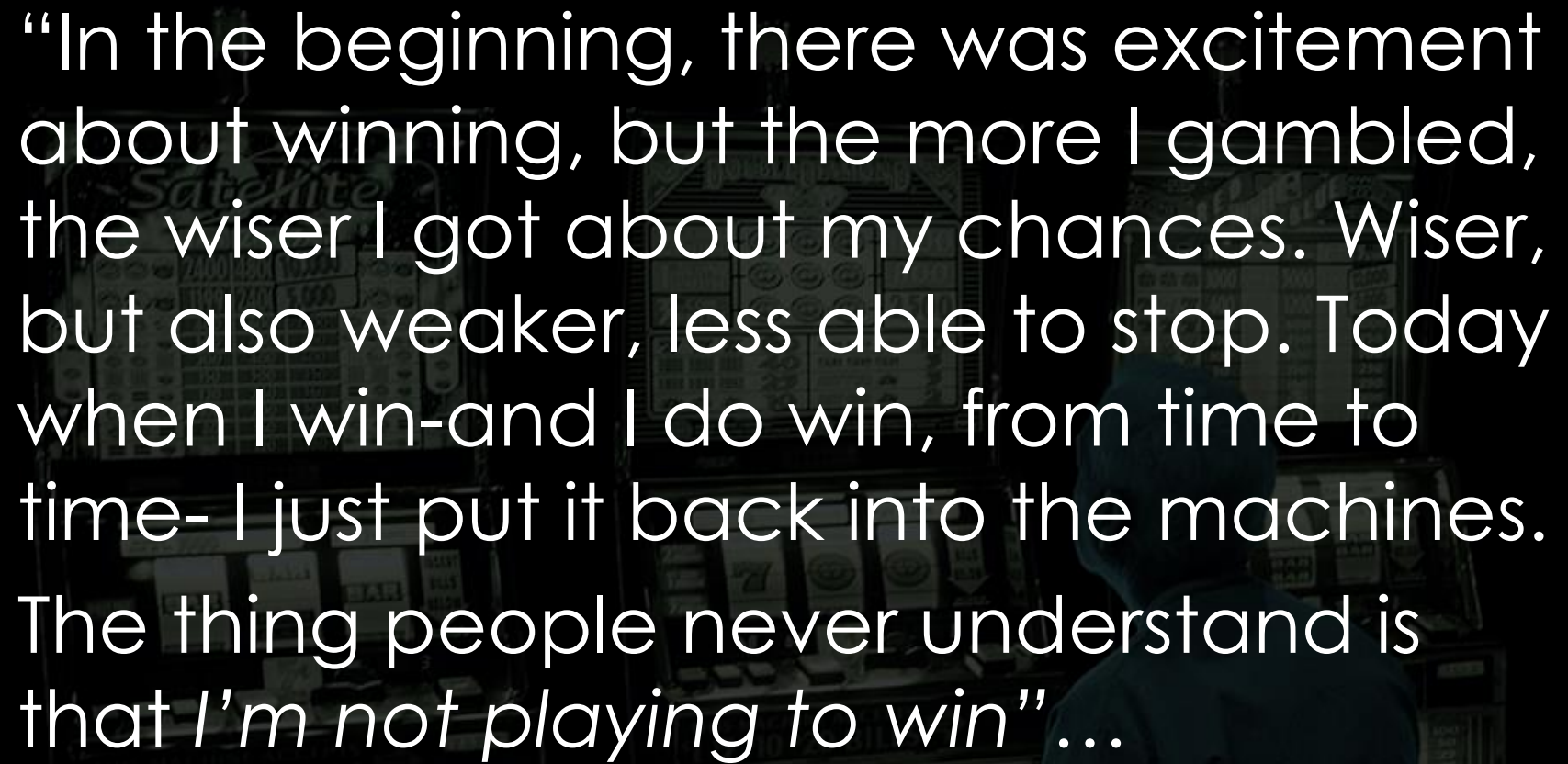


Gamifying running is a social encounter between a community of players with a shared sense of identity: the healthy subject.



1. How does surveillance relate to games? And why do definitions like “games” and “play” shape how we respond to both?
2. How do games change as they move from analogue to digital?
3. Why is gamification important, and how does it link to other practices such as Quantifying the Self?
4. How are quantification and surveillance linked through the Care of the Self?
5. **What are links here to Gambling and Addiction? Where are the differences and the similarities?**



A dark, grainy photograph of a person sitting at a slot machine in a casino. The person is seen from the back, wearing a dark jacket. The slot machine has a screen displaying a game and a control panel with buttons and a lever. The background is dark and out of focus, showing other slot machines and the dimly lit casino floor.

“In the beginning, there was excitement about winning, but the more I gambled, the wiser I got about my chances. Wiser, but also weaker, less able to stop. Today when I win-and I do win, from time to time- I just put it back into the machines. The thing people never understand is that *I'm not playing to win*”...

Mollie
Schüll, pg2

A person is sitting on the floor in a dimly lit room filled with slot machines. The person is wearing a dark jacket and is looking down. The slot machines are arranged in rows, and the person is sitting in front of one of them. The text is overlaid on the image.

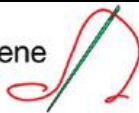
Why play if not to win?

“...To keep playing—to stay in that machine zone where nothing else matters...It’s like being in the eye of a storm, is how I’d describe it. Your vision is clear on the machine in front of you but the whole world is spinning around you, and you can’t really hear anything. You aren’t really there—you’re with the machine and that’s all you’re with.”

*Mollie
Schüll, pg2*



BRCA1 gene

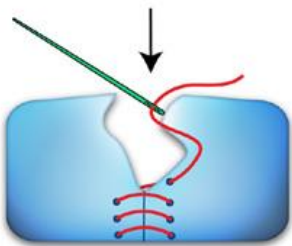



Normally, the BRCA1 gene repairs a broken PTEN gene by “sewing” it back together. When BRCA1 is mutated it stops repairing the PTEN gene, which contributes to cancer tumors and metastasis.

NORMAL (Repair)

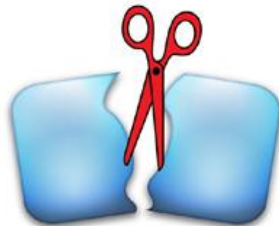


Broken PTEN gene

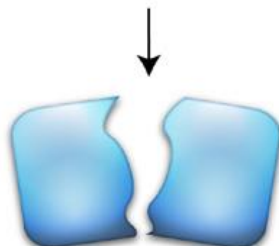


BRCA1 gene repairs PTEN gene, which allows it to work

ABNORMAL (No repair)



Broken PTEN gene



No repair of PTEN gene by BRCA1 gene results in: cell growth, cell death inhibition, cell migration, new blood vessels sprout, and metastasis

Image provided by Nancy Heim, Columbia University Medical Center © 2007

Individualized 2.0 BOADICEA risk calculation results for future cancers

Age	(New) Breast Cancer Risk %	Ovarian Cancer Risk
33	5%	.2%
40	26%	2.5%
45	41%	7%
50	56%	11%
55	66%	16%
60	73%	21%
80	83%	44%

Gamification is about using
veneers of games to deal
with risk head-on



Chance
of starting
at square
1 again:

Breast
cancer:
83%

Ovarian
Cancer:
44%

Gamification creates hyper-aware actuarial subjects, making it much more difficult to sustain the “encounter” of the game

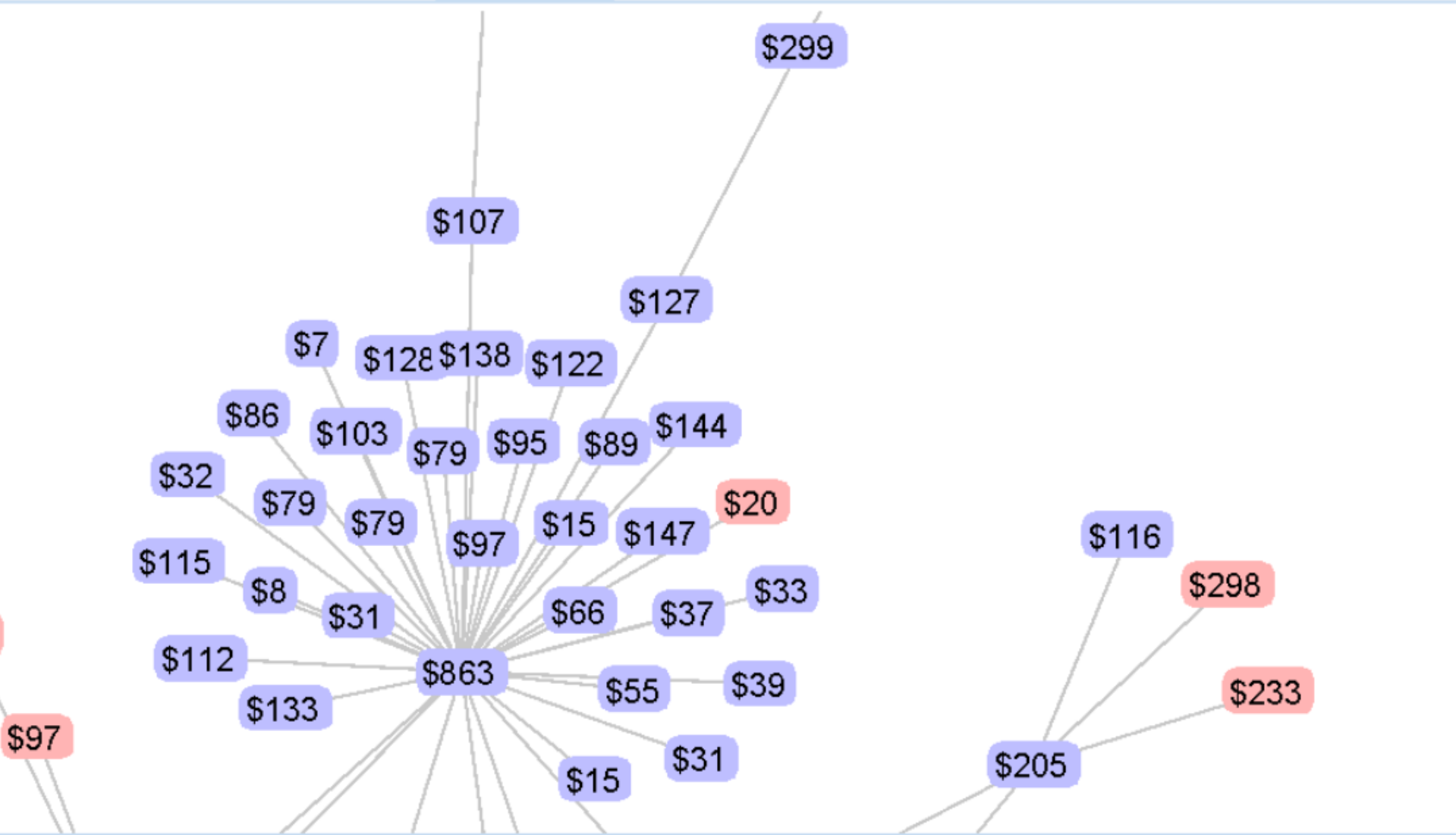


The gambling “encounter”,
while equally surveillance-
dependent, is resistant to
collapse, due to information
asymmetries

Katana Analytics Engine

Churn Analysis Gold Farming About

Global Historical Projections Heat Maps Network Analysis Browser





Playful surveillance technologies can be developed and refined in terms of precision, accuracy, ease of use, and unobtrusiveness, and then be exported to other domains.

To unpack digital play and its implications for everyday life, especially governance and social control, we must unpack the algorithms that make it possible.





Thanks!

@jen_whitson

SSHRC ■ CRSH