



# Big Data, small solidarity?

## Insurance and its new technologies of personalisation

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ICLAM Conference, Maastricht  
May 24, 2016

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## NO wearable device = NO life insurance

21 Aug 14 08:41

This could be our reality in the next 5 to 10 years. If you do not have a wearable device that tracks your health then you will find it nearly impossible to buy life insurance. If not in the next 5 to 10 years then I am convinced we will see this implemented within the next 20 years. How can I make such an outrageous claim?

That's easy. The event of Big Data will bring about a revolution in



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# Overview

- Solidarity in insurance as a result of (not) knowing difference
- Knowing better: the crises of ‘insurance as we know it’
- ‘Big Data’: making lifestyle calculable as difference
  - Promise(s): “First we do things differently, then we do different things”
  - How difference is made and legitimized
  - What should count as difference? (epigenetics, predictive modeling)
- Conclusions: Big data, small solidarity? Living together in difference? Knowable selves in indifferent worlds?



# Postgenomic Solidarity.

## Life Insurance in an era of Personalised Medicine



### Insurance practices

Empirical research  
personal data in insurance



### Lifeworlds

Empirical research fears of  
discrimination



### Policy and Law

Empirical research policy  
and law

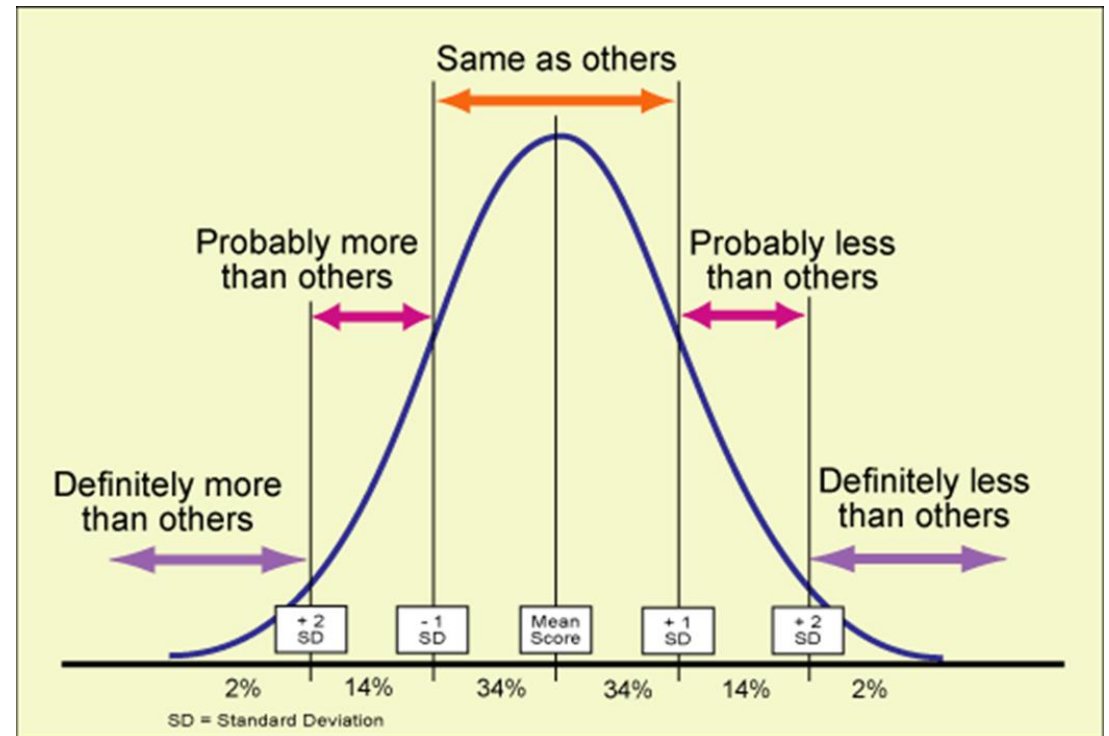


Postgenomic Solidarity



# Insurance technology & solidarity

- Insurers as 'disruptors' of the 19th century
  - 19th century data revolution – statistical knowledge
  - Making social order – stability
  - 'La question sociale'
- Insurance constitutes 'solidarity' through (not) knowing risk
  - 'the norm' – the aggregate
  - Pooling of 'risk'
- Insurance redistributes risk and shared responsibility (Ewald 1986)



# Insurance as we know it and its forms of solidarity

- Mutuality
  - Redistribution within risk groups
  - Chance solidarity
  - Risk pool assumed to be homogeneous

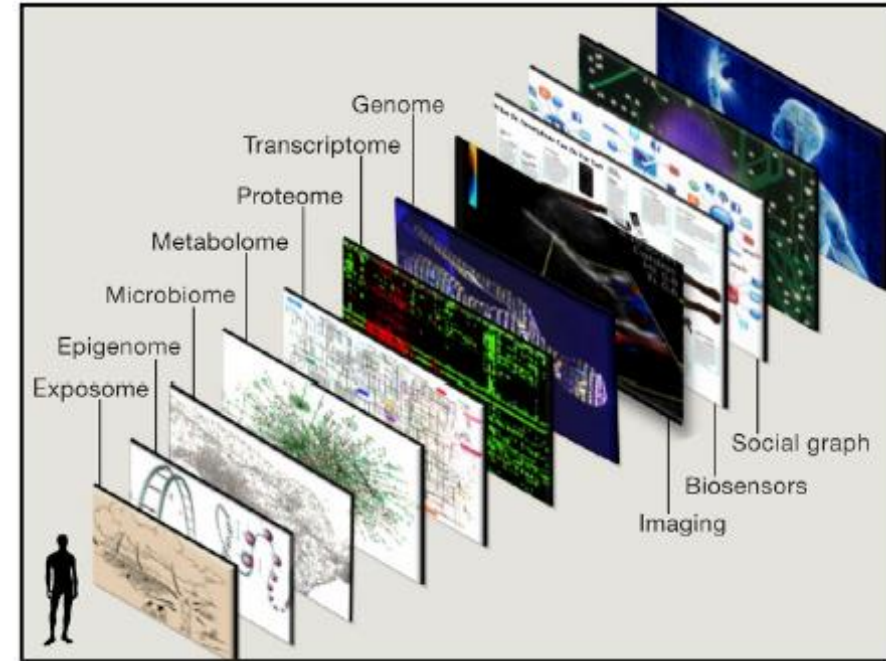
Through better knowledge (assumed) homogeneity becomes heterogeneous

- Solidarity
  - Redistribution between risk groups
  - Subsidizing solidarity

(Wilkie, 1997; Ewald, 1986; Thierry & Van Schoubroeck 2006; Lehtonen 2011)

# New knowledge & imaginaries: the crises of 'insurance as we know it'

- Predictive medicine & 'Big Data'
  - More information
  - More personal
  - More differentiation (possible)
  - How to deal with difference
- Controversies and regulation
  - 1980s HIV
  - 1990s Genetics
  - 2012 Test-Achat ruling (Gender)
  - Axis control/non-control
  - Lifestyle as alternate risk factor
- Solidarity?



Topol, Eric J. (2014). 'Individualized Medicine. From Prewomb to Tomb', *Cell*, 157, 241-253

"... sensitive issues such as HIV and genetics have been key catalysts in turning discrimination, privacy and entitlement into key regulatory issues for insurers" (Swiss Re, 2011: 6).

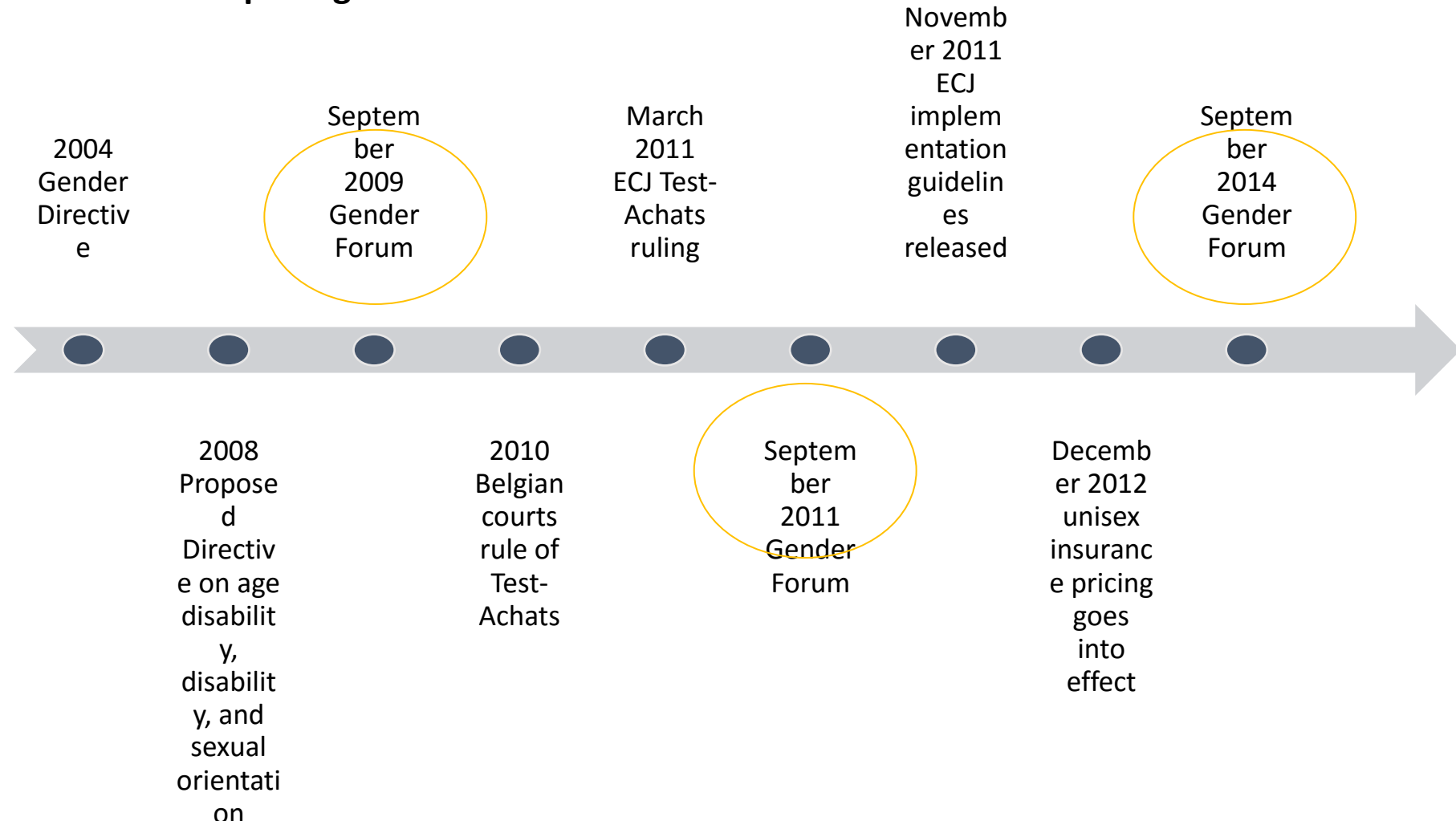
# Genetics as an issue and its regulations

- From 'genetic discrimination' to 'genomic solidarity' (Van Hoyweghen, *Personalized Medicine*, 2012)
  - Effects of genetic non-discrimination legislation: increased rating of lifestyle underwriting
  - Risk carriers vs. risk takers (Van Hoyweghen, *JAMA*, 2010)
- Control vs. no-control logic in medical underwriting



# Gender as an issue and its regulations

## ECJ actions since the passage of the Gender Directive



Rebert & Van Hoyweghen, 2015, The right to underwrite gender The Goods & Services Directive and the politics of insurance pricing, *Journal of Gender Studies*

# Gender as an issue

- Equality groups (e.g. gender organisations): gender is ‘beyond individual control’ (Parent et al, 2009)
    - < fundamental rights (skin colour, genetic heritage, ... gender)
  - (again) towards control vs. no-control logic in insurance
  - ECJ encouraged innovation of ‘alternate risk factors’ [in lieu of gender]
- Open the way of market-making of lifestyle underwriting/personalized underwriting ...



# Big Data promises

McKinsey&Company

McKinsey Global Institute



June 2011

Big data: The next frontier  
for innovation, competition,  
and productivity



Swiss Re

Living in a Hyperconnected  
World – Implications for the  
Casualty Re/Insurance Industry



Assurance, prévention,  
prédiction ...dans l'univers  
du Big Data

Rapport pour l'Institut Montparnasse

INSTITUT  
MONTPARNASSE  
*Pour un 21<sup>e</sup> siècle solidaire*

François Ewald, Professeur honoraire au CNAM.  
International Research Fellow de la Law School de l'Université du Connecticut.  
Membre du CORA (Comité d'orientation et de réflexion de l'assurance).

# Big data concerns

McKinsey&Company

Swiss Re

23 Sep 2015

Generali, the health insurer who wants to know everything about you  
By Kirsten Fiedler

McKinsey Global Institute



June 2011

Big data: The next frontier for innovation, competition, and productivity

**Step and save: The truth about wearables and health insurance**

Cheaper premiums for wearable users sounds great – but should you sign up?

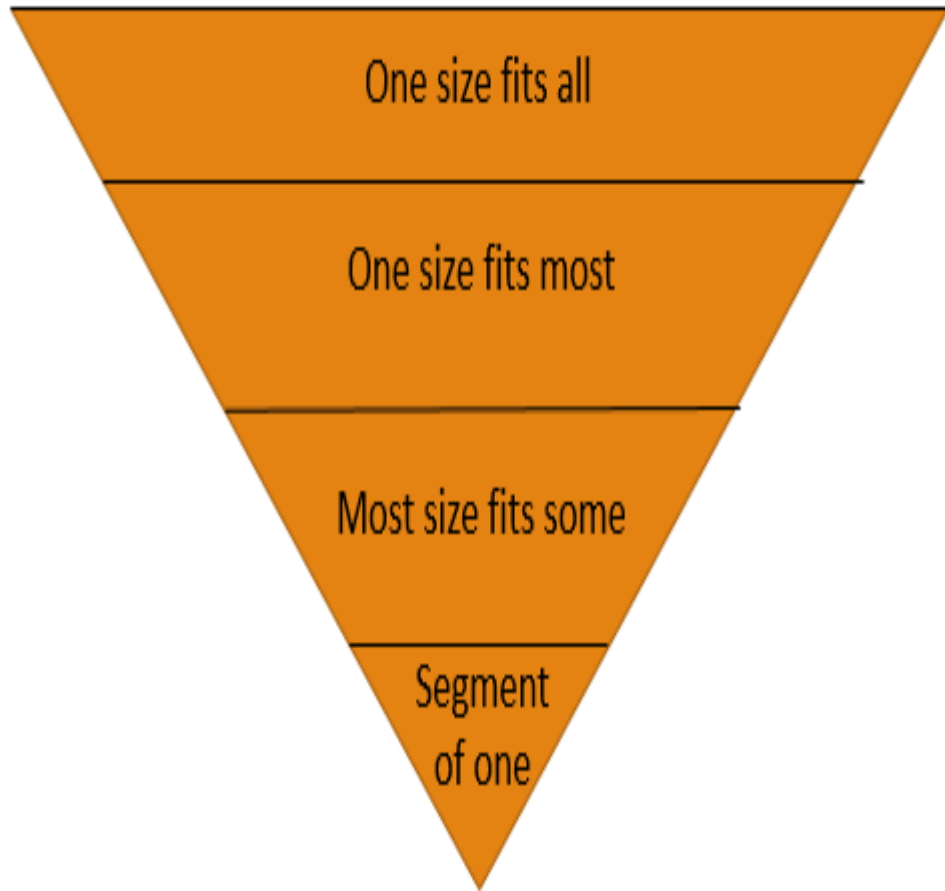
Assurance, prévention, prédiction ...dans l'univers de la data

de l'Institut Montparnasse

INSTITUT MONTPARNASSE

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# Big data dreams: Towards the 'segment of one'?



**““Pay As You Live” insurance solutions have the potential to significantly disrupt the Life and Health Insurance markets.** When a customer shows lifestyle characteristics that are linked to better health outcomes such as regular exercise, a healthy number of daily footsteps and a healthy BMI, their premiums can be adjusted to reflect their reduced risk. **This clearly benefits the customer through reduced premiums but also benefits the insurer through better pricing,** the broader community through reduced critical illness such as diabetes, and the government through the reduced cost of health care.”

*EY (2015), Usage Based Insurance. The new normal?*

# Big Data in the making

## Making Insurance *Truly* Personal

### Generali Vitality: Ab Juli werden Kunden für Fitness belohnt

Donnerstag, der 24.03.16

Die Generali startet im Juli das neue Bonusprogramm Vitality. Kunden mit einer Risikolebens- oder Berufsunfähigkeitsversicherung erhalten zukünftig Rabatte und Prämien, wenn sie beispielsweise an Vorsorgeuntersuchungen teilnehmen. Auch die Ernährung und Fitness werden bei Teilnehmern überwacht. Ist dies der Anfang des gläsernen Versicherten?



Julia  
Reda  
Zum

Fitsense is a data analytics platform working with insurance companies to personalise life and health insurance for anyone with a smartphone or wearable device.

Full website is coming soon.

Die Generali Versicherungsgruppe will im Juli 2016 das Vitality Gesundheitsprogramm in Deutschland auf den Markt bringen. Dieses **belohnt Kunden für gesundheitsbewusstes Verhalten**, beispielsweise bei der Teilnahme an Sportkursen oder Vorsorgeuntersuchungen. Bereits im Juli 2015 hat Generali in einer Pressemitteilung erste Eckpunkte des neuen Bonusprogramms umrissen. Demnach soll Vitality **nicht nur im Rahmen der Krankenversicherung relevant** sein. Zuerst ist vielmehr die Einbindung des Gesundheitsprogramms in die [Berufsunfähigkeits-](#) und [Risikolebensversicherung](#) vorgesehen. Entsprechend soll die zur Generali-Gruppe gehörende Dialog Lebensversicherung, die unter anderem den Vertrieb der Risikolebens-, Berufs- und Erwerbsunfähigkeits- sowie



Gesundheit geht vor: Generali startet neues Bonusprogramm

# Making and legitimizing difference: Car as a detour

“Imagine everything an insurer could learn about a prospective customer: age, type of car, accident history, credit history, geographic location, personal and family medical history, behavioral risk factors, and so on. A predictive model provides a mapping of all these actors combine onto the expected cost of insuring the customer. Producing this map has several prerequisites:

- A clearly defined target variable, i.e. what the model is trying to predict
- The availability of a suitably rich data set, in which at least some predictive variables correlated with the target can be identified
- A large number of observations upon which to build the model, allowing the abiding relationships to surface and be separated from random noise
- An application by which model results are translated into business actions

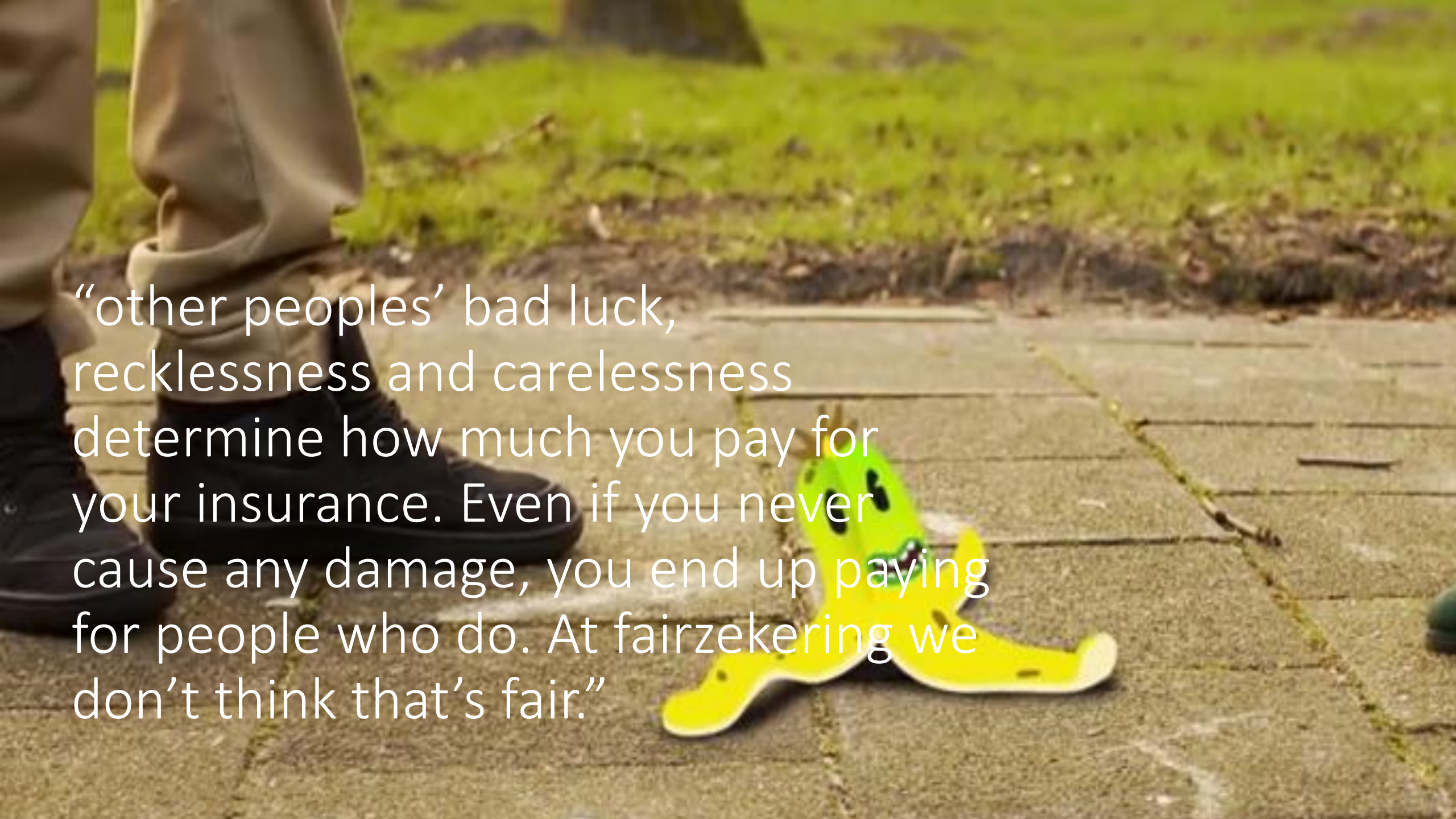
While these requirements are satisfied with relative ease in our auto insurance example, life insurers may struggle with several of them.”

Deloitte (2010), ‘Predictive Modeling for Life Insurance. Ways Life Insurers Can Participate in the Business Analytics Revolution’



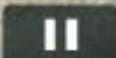
# Making and legitimizing difference



A person wearing khaki pants and black shoes is walking on a paved sidewalk. A banana peel is on the ground in front of them. The background is a grassy area with some fallen leaves.

“other peoples’ bad luck, recklessness and carelessness determine how much you pay for your insurance. Even if you never cause any damage, you end up paying for people who do. At fairzekering we don’t think that’s fair.”

“If you want to be reckless, we are not interested in insuring you.”



00:21

00:52



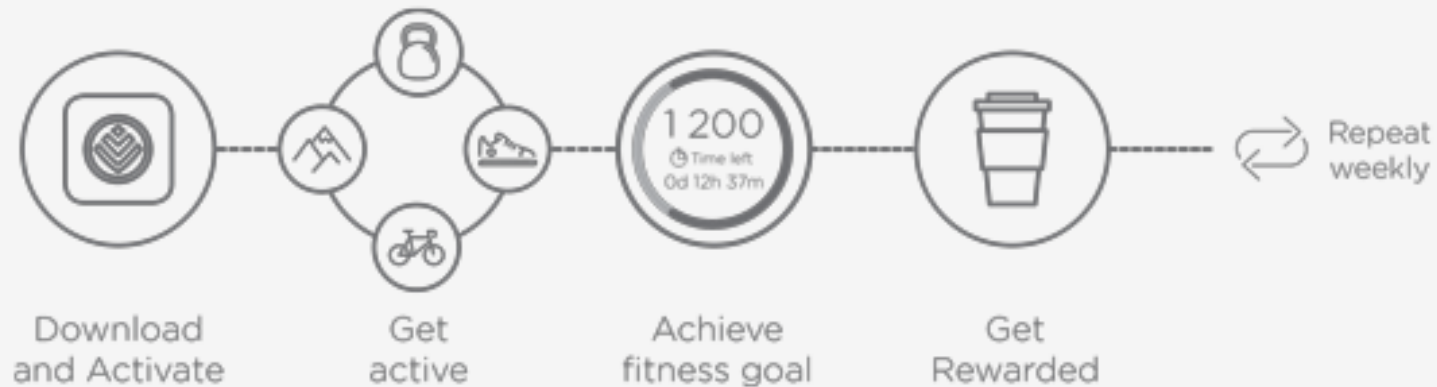
# Making difference in health insurance?

“While I like the idea of pooled risks, I believe it leads us to disengage and incentivizes indifferent behavior towards the costs of your actions. I like the way telematics puts responsibility squarely back in each consumer's court.

And the proof it works is ample: mHealth apps are simply exploding and while 2 years ago my friends never cared about what they ate or whether they exercised, today they all have some kind of exercise tracker that incentivizes them to be active, eat better, etc.” (VP new and Social Media, comment on blogpost OpenMinds Swiss Re, 2014-07-24)

# Earn **Vitality points** for getting active to achieve your weekly goals.

Your **weekly fitness goals** are set by us, but are **personalised to you** and adjust automatically based on your activity levels. Keep working towards your goal and be rewarded if you achieve it.



# Insurer of the future as a caring big mother?

“the basic logic of the insurance industry—that it is impossible to predict who will be hit by what misfortune when, and that people should therefore pool their risks. “Cherry-picking” low-risk customers and spurning those who will prove liabilities is becoming much easier. In the process, insurers may transform themselves from distant, cheque-writing uncles into ever-present and interfering helicopter parents. The prize for the nimblest will be huge: the industry manages more than \$30 trillion, nearly as much as the \$36 trillion held by pension funds; last year it made \$338 billion in profits”. (The Economist, 2015)

# What counts as difference?

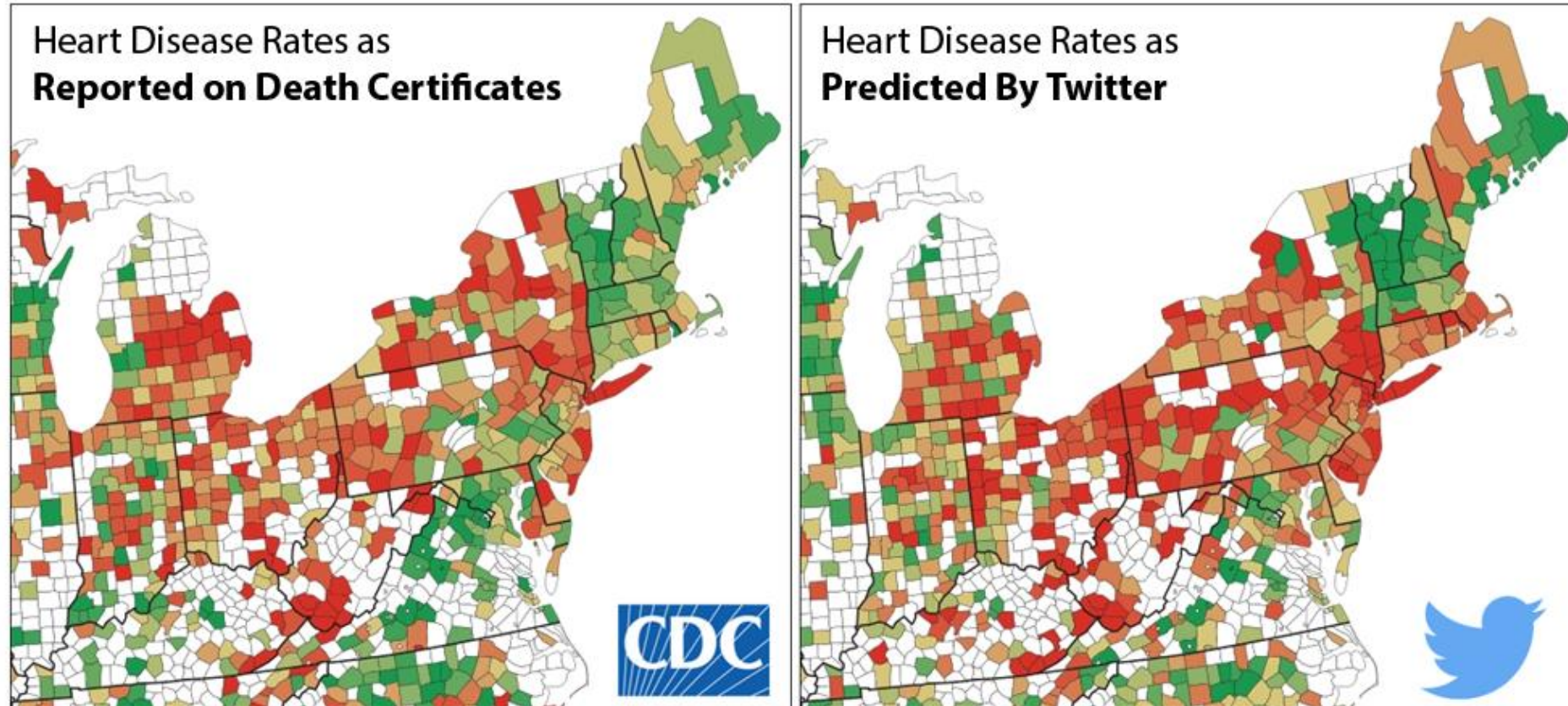
- Legislation mainly based around control/no control logic
- Move to lifestyle underwriting can be legitimized since there are no categories used that “stick to people” – lifestyle as life choice, ‘we can choose to do better’”
- Control/no control logic – but: other knowledges in big data:
  - Epigenetics
  - Predictive modeling

# Epigenetics - postgenomics

- From gene sequence to gene expression
- How the social gets 'under the skin'  
“ Epigenetics provides a mechanism by which environment can interact with identical genotypes to produce a variety of phenotypes” (MacFarlane et al. 2009, p. 625).
- Epigenetics and 'environment' : e.g. mother – foetus debate (Richardson et al. 2014) – distribution of responsibility (mother, ..., father?)
- Epigenetics and 'memory' – transgenerational epigenetic inheritance: Dutch Hunger Winter – distribution of responsibility?
- → Tenacity of nature vs nurture logic/ control vs. no-control logic?



# What counts as difference? Predictive modeling (1)

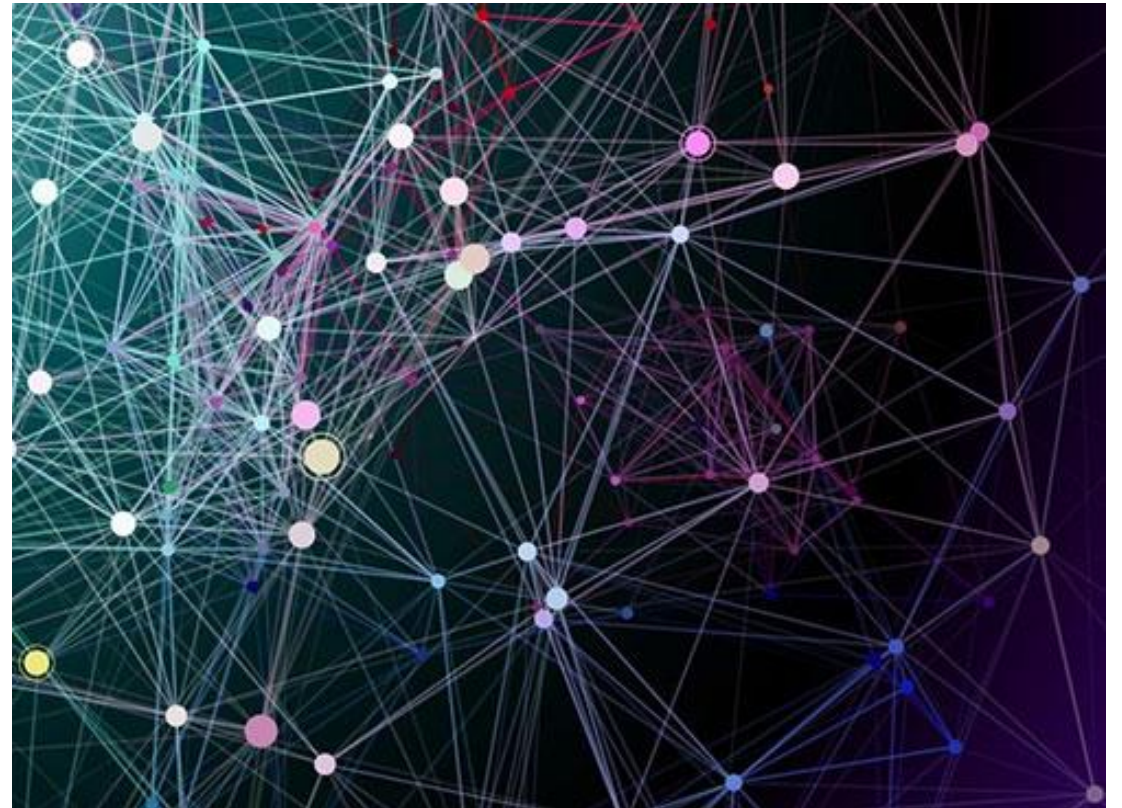


Less Deaths

More Deaths

# What counts as difference? Predictive modeling (2)

- Machines do not 'think' along the logic of control vs. Non-control: correlations between variables are detected as useful/useless
- What to do with findings that show strong correlation without being able to appoint an environmental/external cause or a responsible informed decision maker?
- Real innovation: how to deal with this production of difference?
  - Proliferation of difference
  - Flattening of difference



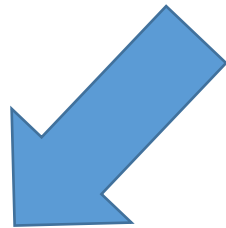
# Conclusions: Big data, small solidarity? (1)

- Solidarity in insurance as a result of (not) knowing
- New types of knowledge urge insurers to deal with newly discovered differences
  - Proliferation of difference vs. Flattening of difference
  - Regulatory logic: control vs. non-control
  - Lifestyle as difference that 'can' be taken into account
- 'Big Data': making lifestyle calculable as difference
  - Promise(s): "First we do things differently, then we do different things"
  - How difference is made and legitimized

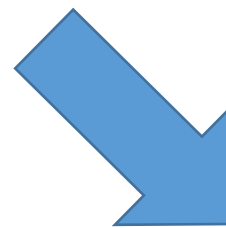
# Conclusions: Big data, small solidarity? (2)

- What should count as difference when border is never clear-cut?
  - Epigenetics, predictive modeling

Big data, small solidarity?



Living together in difference?



Knowable selves in indifferent worlds?

# Questions?

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