



Het gat tussen weten en doen

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Sophie van der Zee

Quiz

- Welk van de volgende activiteiten heeft u tenminste één keer in uw leven gedaan? (u krijgt één punt voor elke bewering)
 - Een sms/appje sturen tijdens het autorijden
 - Bellen op de fiets
 - Een rood verkeerslicht negeren
 - Klikken op een link in een email zonder het adres van de afzender en het adres (url) van de website te controleren
 - Een bestand illegaal downloaden
 - Geen condoom gebruiken tijdens een one-night-stand (in de afgelopen 20 jaar)

Wie heeft er minstens 1 punt?

Wist u echt niet dat uw gedrag risicovol was?

Of wist u dat wel, en nam u dat risico voor lief?



Overzicht

1. Illustratie: Cybersecurity veldstudie
2. Gedragseconomie: hoe mensen met risico omgaan
3. *The next level*: voorbij “awareness campagne”

A person in a dark suit is seen from behind, holding a large, dark umbrella. The background is a dense field of binary code (0s and 1s) in a light gray color, creating a digital rain effect. The overall scene is monochromatic, with shades of gray and black.

1. Illustratie: Cybersecurity veldstudie

De overheid en bedrijfsleven zetten in op het vergroten van kennis



Aanname:
Als je weet hoe je je
digitaal veilig moet
gedragen, doe je dat
ook



Spoiler alert: In het lab lijkt het ook zo te werken

H AIS-Q vragenlijst

	Knowledge	Attitude	Behavior

H AIS-Q vragenlijst

	Knowledge	Attitude	Behavior
Clicking on links in emails			
Re-using passwords			

H AIS-Q vragenlijst

	Knowledge	Attitude	Behavior
Clicking on links in emails	I'm allowed to click	It's always safe to click	I don't click
Re-using passwords	It's acceptable to use the same password	It's safe to use the same password	I use different passwords

Drie ingrediënten

Security Vragenlijst

Cyber Security Training

Phishing Experiment (lab)

	Victims of cyberbullying		Victims of online harassment		Chi
	%	n	%	n	
Technological coping					
I deleted the person from my contacts.	75%	81	66%	173	2.71
I changed my settings so that the person could not contact me anymore (e.g. blocking the person, filtering).	64%	67	59%	161	0.88
I changed my phone no./email/profile/nickname.	35%	36	18%	49	12.62**
I searched for advice on the internet.	24%	26	7%	20	20.85**
I deleted my profile on the web pages where this happened.	20%	20	14%	34	2.20
I reported this to the administrator.	15%	14	21%	55	2.07
Reframing					
I thought to myself that the person was pitiful and stupid.	87%	94	91%	263	1.14
I thought to myself that whoever is doing this to me is not worth my time.	74%	80	78%	218	0.83
I thought to myself that something like that could not hurt me.	25%	25	46%	126	13.16**
I thought to myself that it was actually nothing serious.	7%	7	41%	111	37.58**
Ignoring					
I decided to ignore it.	60%	65	65%	189	1.14
I didn't pay attention to it.	18%	15	44%	108	17.28**
Dissociation					
I thought to myself that if something similar were to happen in real life, it would be much worse.	55%	51	56%	144	0.02
I thought to myself that such things simply happen on the internet.	47%	46	65%	172	10.76**
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Cognitive avoidance					
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Seeking support					
I told someone about it.	78%	84	70%	199	2.32
Confrontation					
I tried talking to the person on the internet or via cellphone to persuade him or her to stop.	52%	55	38%	102	5.96*
I tried face-to-face talking about this behavior with the person or somehow persuade her or him to stop.	48%	49	42%	106	0.94
Retaliation					
I did something similar to the person, face-to-face (in real life).	14%	14	23%	58	3.49
I did the same thing or something similar to the person online or via mobiles.	14%	14	12%	31	0.31

Note: * $P < .05$, ** $p < .01$. The percentages are computed from valid values.



PayPal

We need your help

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We need you to update your informations for further use of your PayPal account.

[Update your information](#)

You are currently made disabled of :



Adding a payment method
Adding a billing address

Sending payment
Accepting payment

Please do not reply to this email. We are unable to respond to inquiries sent to this address. For immediate answers to your questions, visit our Help Center by clicking "Help" located on any PayPal page or email.

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Kunnen we kennis meten met vragenlijsten?

Security Vragenlijst

Cyber Security Training

Security Vragenlijst

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Kan kennis zorgen voor veiliger gedrag?

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Phishing Experiment (lab)

Proefpersonen met hogere HAIS-Q scores zijn beter in het identificeren van phishing emails in het lab (correlaties tussen .30-.42)

Parsons et al., 2017

Maar... In het lab gaat het om 1 test moment



Als het moet, kunnen we ons allemaal *voorbeeldig* gedragen



Je dag in, dag uit, voorbeeldig gedragen is een stuk lastiger



Zeker digitaal, als de sociale controle lager is





Hoe goed voorspellen security vragenlijsten ons *dagelijkse digitale gedrag*?

Veldstudie

Security Vragenlijst (N = 175)

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- 2 weken later
- Zonder waarschuwing vooraf
- Werk email account



Phishing Experiment (veld)

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Gemeten: Klikte wel of klikte niet?



46.6% klikte

Klikresultaten gekoppeld aan vragenlijst scores

- Geen verband tussen HAIS-Q score en klikgedrag, $\chi (1, 133) = 1.67, p = .20$
- Geen verband tussen de subschaal emailgebruik en klikgedrag, $\chi (1, 133) = .3, p = .59$

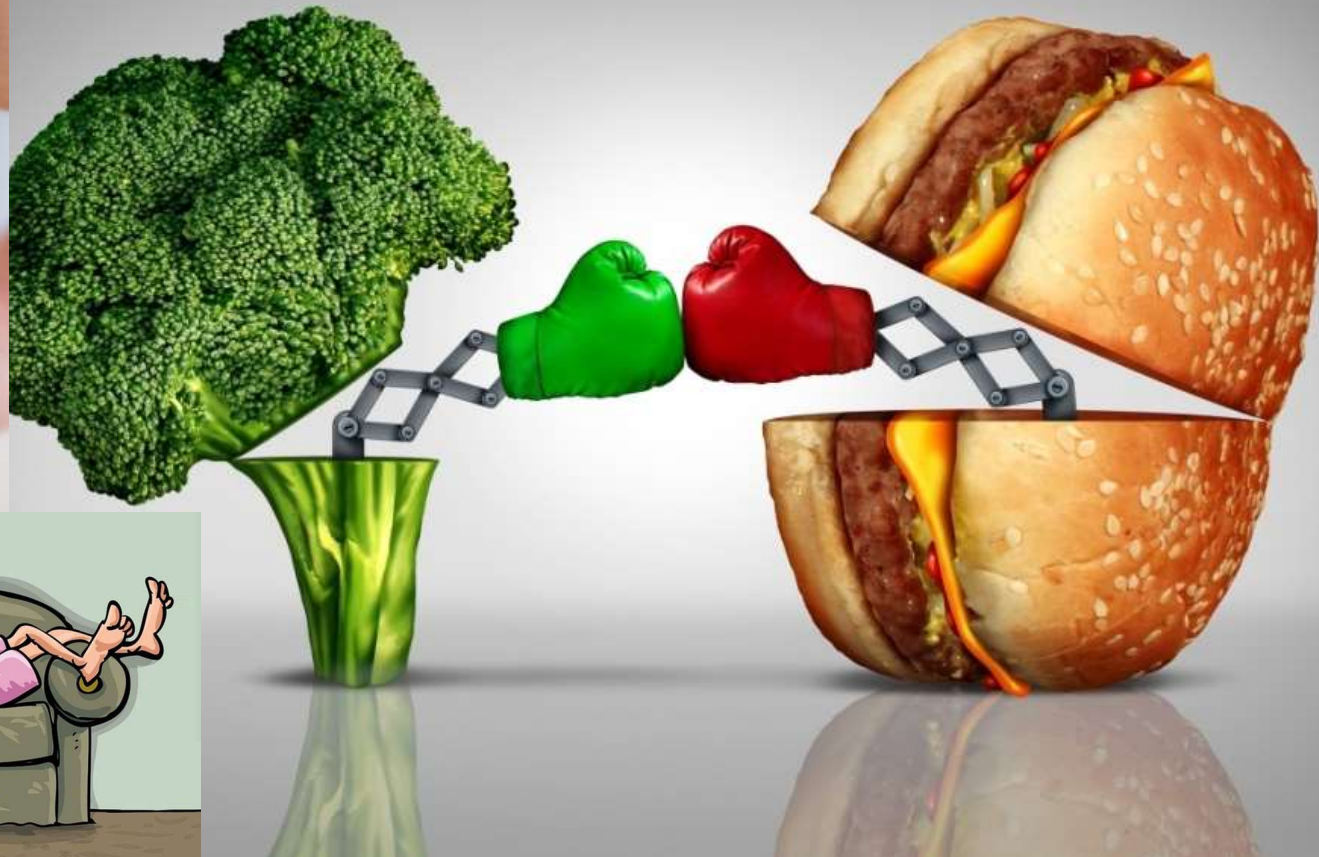
Security vragenlijsten voorspellen wel ons *voorbeeldige* gedrag



Security vragenlijsten voorspellen NIET ons *dagelijkse digitale gedrag*



Gat tussen weten en (dagelijks) doen



Als kennis ons gedrag niet bepaald, wat dan wel?



2. Gedragseconomie: Hoe mensen met risico omgaan

Overzicht: Wat ik heb geleerd

- In mijn onderzoek
 - NWO Vidi grant “Beyond rational expectations”
 - Het meten van wat mensen geloven
 - Met als doel hun acties beter te begrijpen

- In mijn onderwijs
 - Problem-based learning met bedrijven en het Behavioural Insights Netwerk Nederland
 - Altijd dezelfde oplossing: meer informatie geven
 - Misschien is dit niet de juiste manier van denken?

Het rationele gat

- Risicohouding
- Begrenzing
 - of de risico's gevolgen voor anderen hebben.
- Verkeerde prikkels

Prospect theory

- Kahneman & Tversky (1979)
 - Meer risico's nemen voor verliezen dan voor winsten

Het 'Aziatisch ziekteprobleem'

- Stel dat de VS zich voorbereidt op het uitbreken van een ongewone Aziatische ziekte waarvan men verwacht dat het 600 mensen zal doden. Er zijn twee alternatieve programma's opgesteld om de ziekte te overwinnen. De voorspellingen van de gevolgen van de programma's zijn:

Programma A: 200 mensen zullen gered worden

Programma B: er is $\frac{1}{3}$ kans dat 600 mensen gered zullen worden en $\frac{2}{3}$ kans dat niemand gered zal worden

Het 'Aziatisch ziekteprobleem'

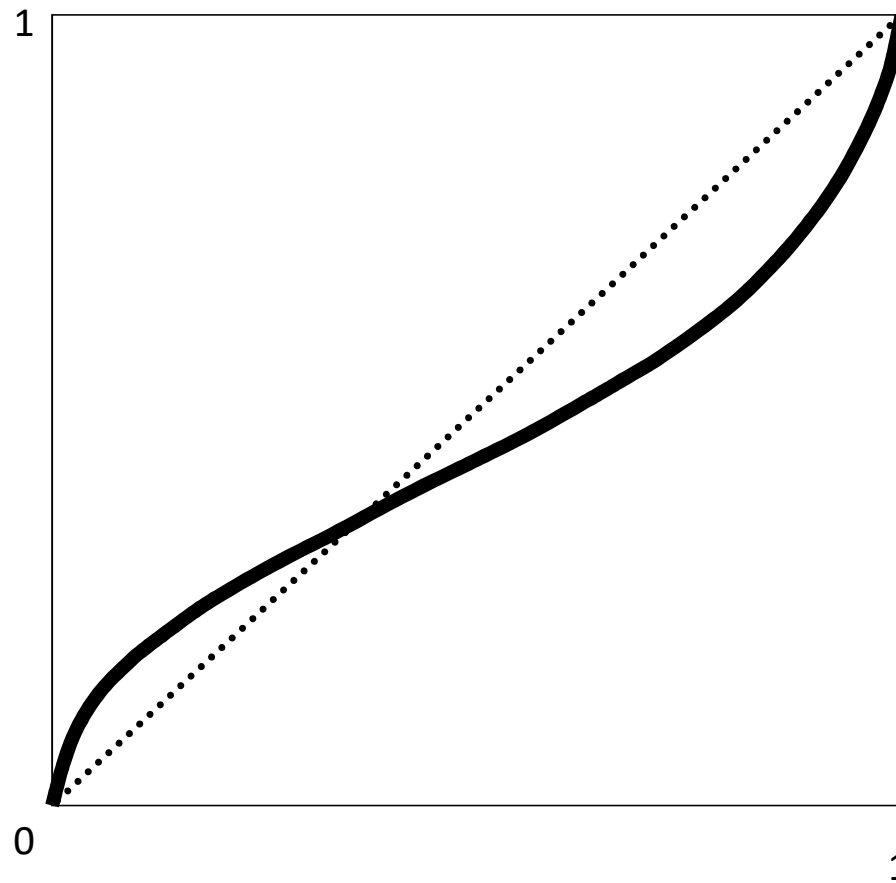
- Dezelfde situatie, twee nieuwe programma's

Programma C: 400 mensen zullen sterven

Programma D: er is $\frac{1}{3}$ kans dat niemand zal sterven en $\frac{2}{3}$ kans dat 600 mensen zullen sterven

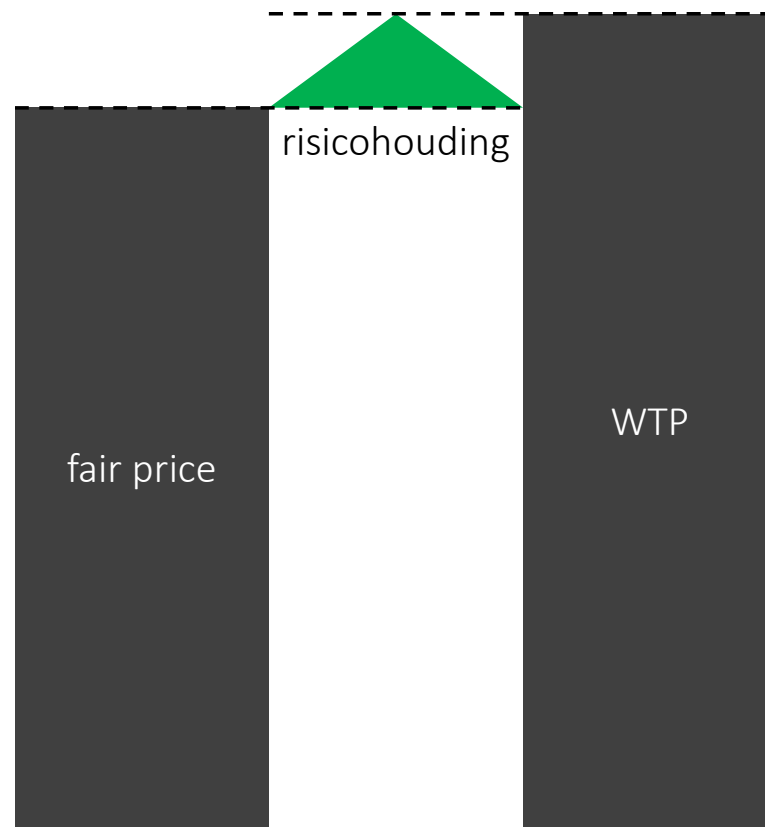
Prospect theory

$w(p) =$
kansweging =
wat ze doen

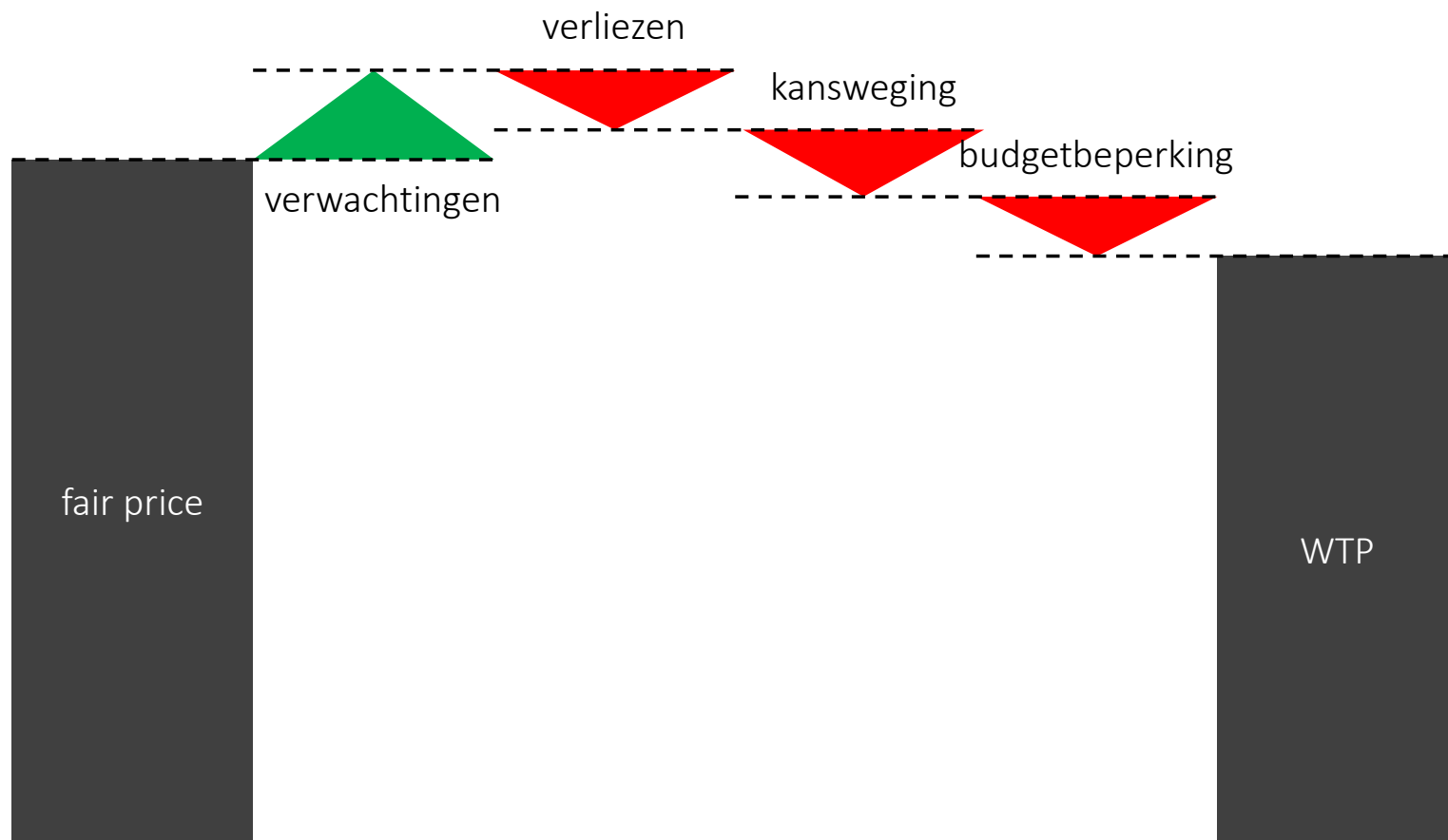


$p =$ kans
= wat ze weten

Illustratie: verzekering



Illustratie: verzekering



Tegenstrijdige informatie (ambiguïteit)

- a) Twee experts zeggen dat het risico tussen de 0% & 20% valt
 - b) De ene expert zegt 0%, de andere zegt 20%
-
- We hebben gemeten hoe mensen deze informatie in een experiment interpreteren
 - Setting a: alsof het risico bijna 20% is
 - Setting b: alsof het risico bijna 10% is

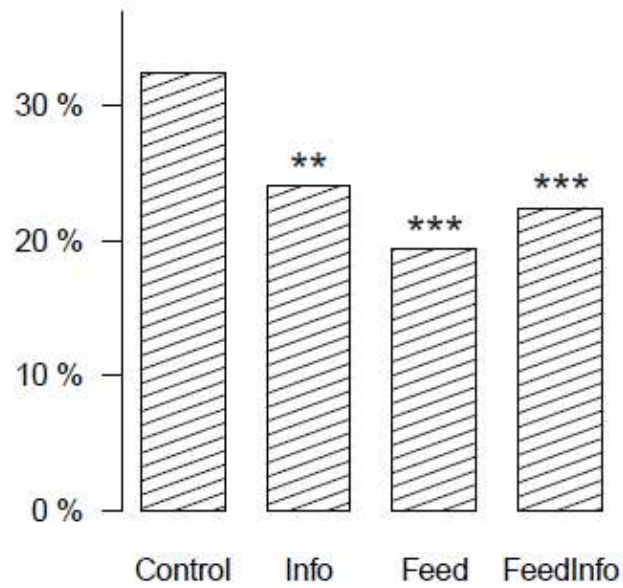
3. The next level:

Voorbij de “awareness campagne”

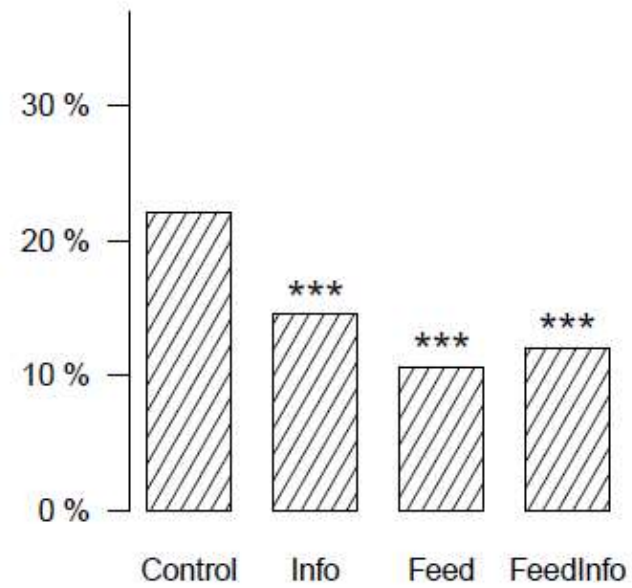
Logica?

- We geven informatie => mensen weten wat te doen => ze doen het
- Mensen voelen de behoefte => ze zoeken informatie => ze doen iets
- Mensen voelen de behoefte => ze proberen iets => ze leren => ze proberen iets anders
- Ze doen iets voor een andere reden => ze leren dat het goed is
- ***Trigger need / trigger action***

Informatie vs ervaring



(a) Visit



(b) Fill

(Stoutmoedige) conclusies

- Vergeet awareness campagne
- Trigger need / trigger action
- Onderzoek welke factoren wel echt ons gedag beïnvloeden
 - Leer daarbij van andere vakgebieden (2 voorbeelden)

1) Systematisch testen van factoren: Cyber Security Paradox

Target audience

- Students
- General population
- Employees
- Security experts
- High profile targets

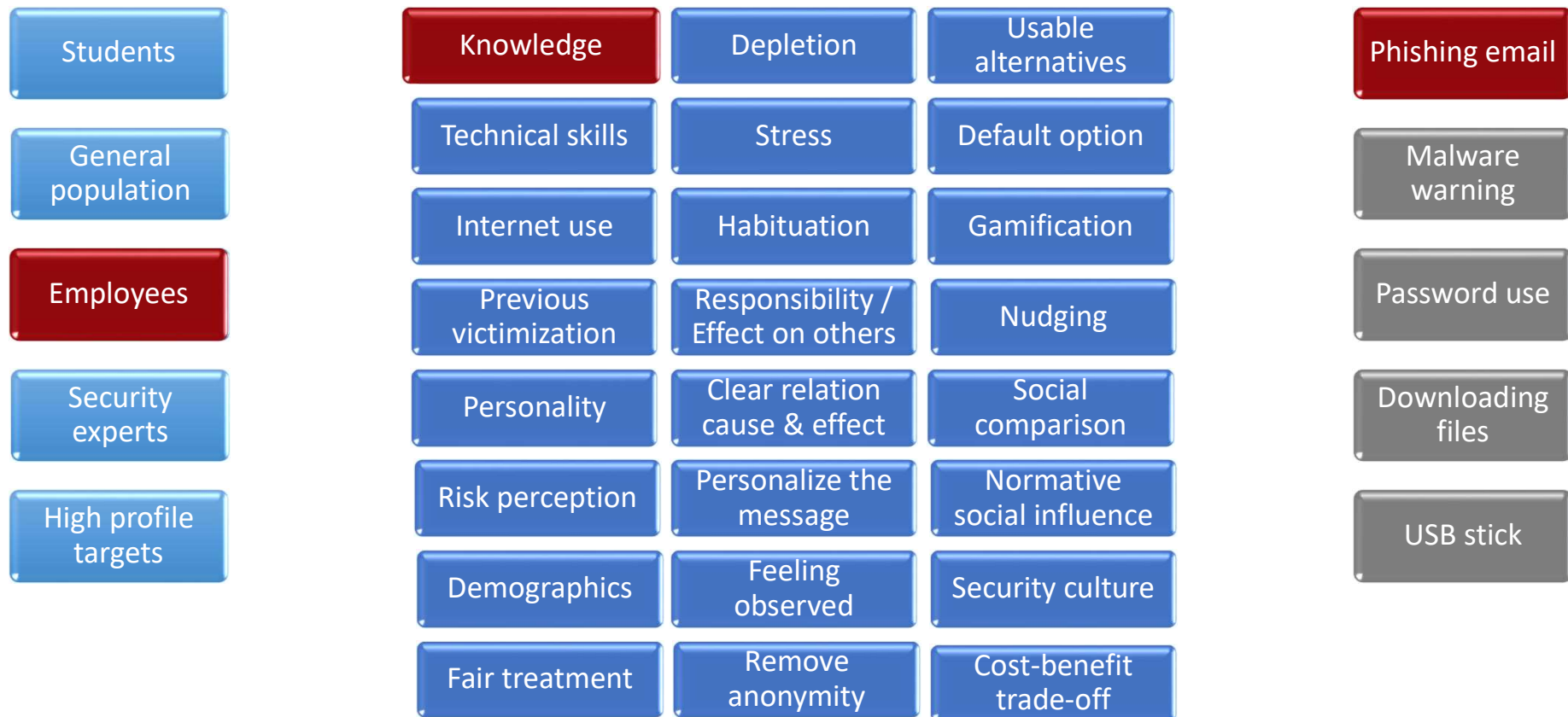
Potential factors

- | | | |
|------------------------|-----------------------------------|----------------------------|
| Knowledge | Depletion | Usable alternatives |
| Technical skills | Stress | Default option |
| Internet use | Habituation | Gamification |
| Previous victimization | Responsibility / Effect on others | Nudging |
| Personality | Clear relation cause & effect | Social comparison |
| Risk perception | Personalize the message | Normative social influence |
| Demographics | Feeling observed | Security culture |
| Fair treatment | Remove anonymity | Cost-benefit trade-off |

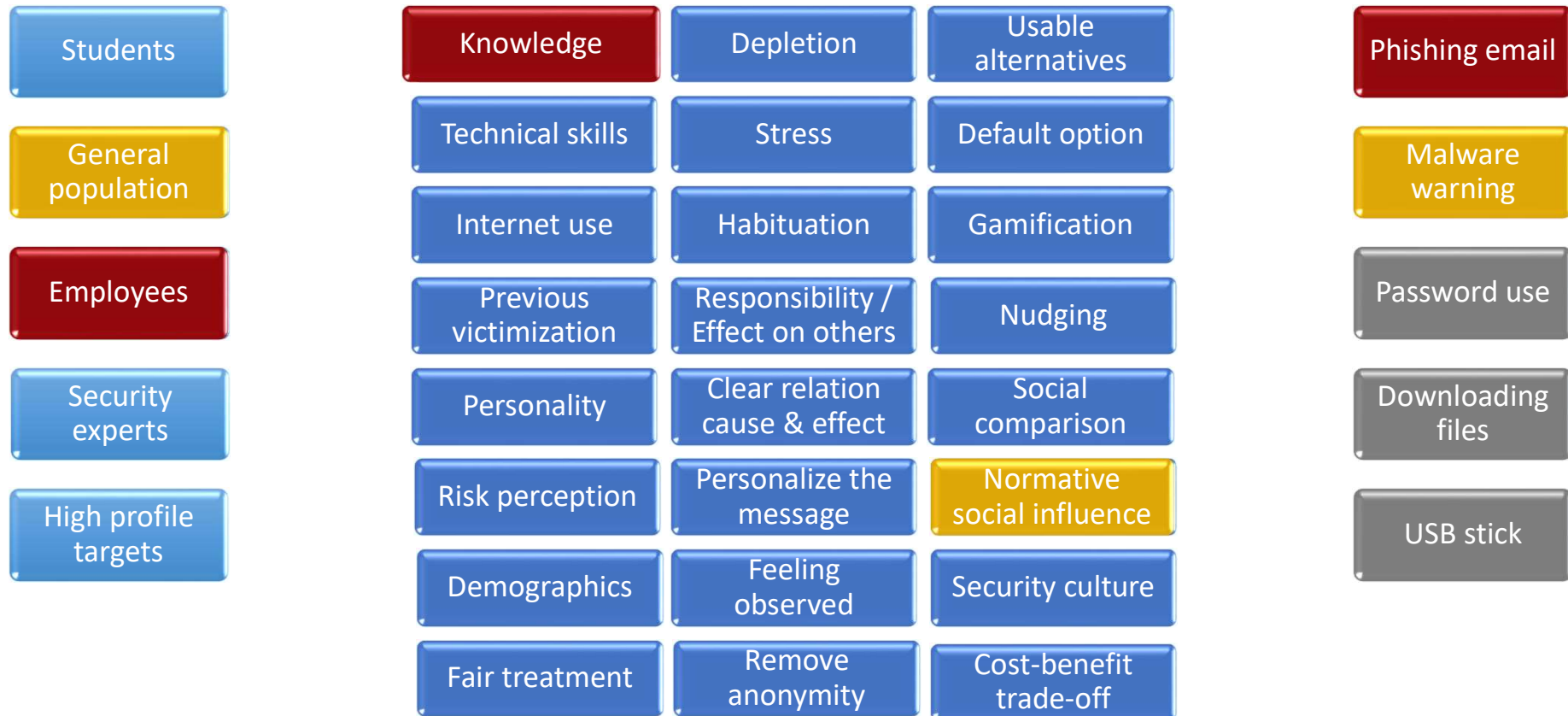
Behaviors

- Phishing email
- Malware warning
- Password use
- Downloading files
- USB stick

Cyber Security Paradox



Cyber Security Paradox



Example Normative Social Influence

The site ahead
contains malware

Please return to
safety

Example Normative Social Influence

The site ahead
contains malware

Please return to
safety

The site ahead
contains malware

Continuing may harm
your computer
Please return to
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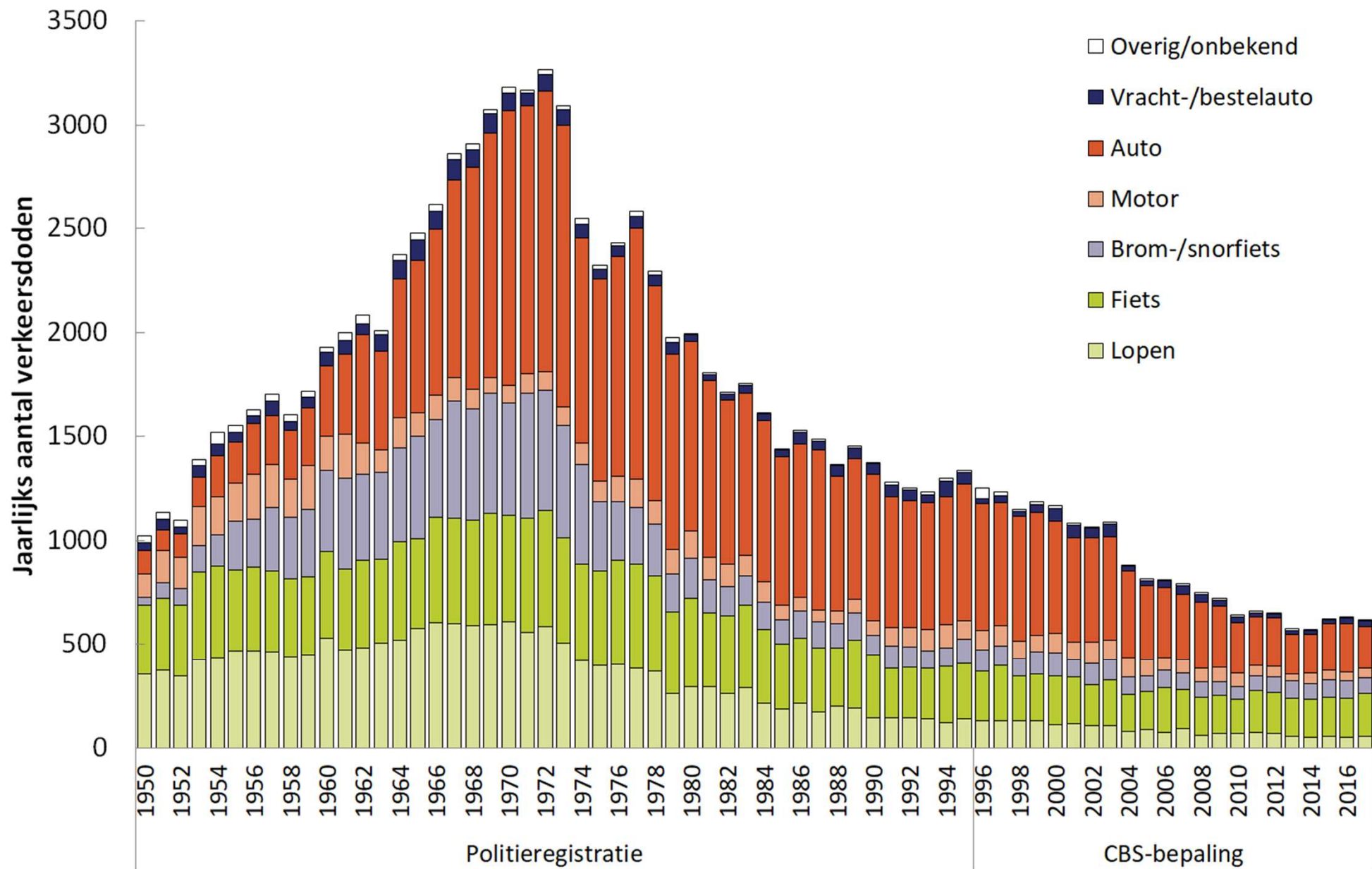
The site ahead
contains malware

90% of people visiting
this website decide to
return to safety

2) Succesverhaal: de autogordel

- 1885, Carl Benz: 1e auto met bezinemotor
- 20e eeuw: Steeds meer auto's, steeds meer en zwaardere verkeersongelukken
- Het dragen van een gordel kan letsel bij ongelukken met 30-40% verminderen
- 1956: 1e autogordel
- 1959: 1e driepuntsgordel
- 1975: Verplicht om nieuwe auto's van een gordel te voorzien
- 1976: Dragen van een gordel verplicht





Waarom werkt het?

- Wetgeving (productie en gebruik)
- Strafrechtelijke gevolgen → boete 140 euro
- Enforcement: Geflitst zonder gordel? Extra boete
- Civielrechtelijke gevolgen → >25% van schade bij ongeval zelf betalen
- Enabling: Iedere nieuwe auto heeft een gordel
- Sociale norm: Het dragen van een gordel raakte ingeburgerd
- Alarm bij rijden zonder gordel

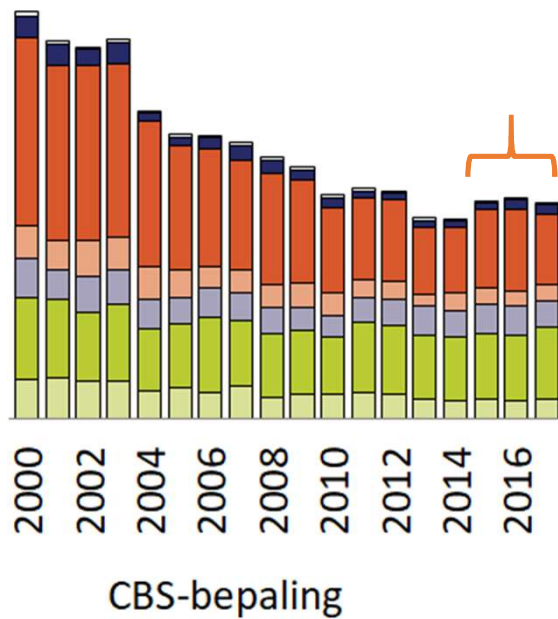


Is alleen kennis voldoende?



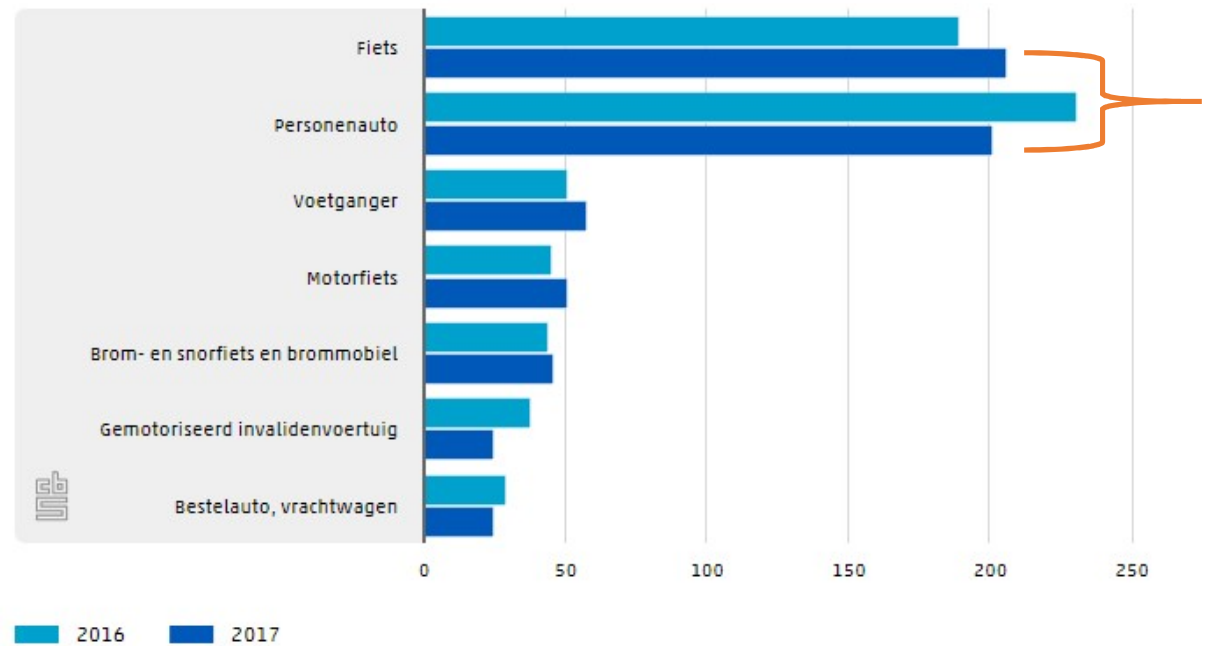
Sinds de smartphone is er weer een stijging in het aantal verkeersdoden, met vooral fietsers als slachtoffer

De kennis is er



Verkeersdoden in de 21^e eeuw

Verkeersdoden naar vervoerswijze



Bron: CBS, Rijkswaterstaat

Verkeersdoden 2016-2017 per vervoersmiddel

Hoe ziet het succesverhaal van de mobiele telefoon in het verkeer eruit?



Wat kunnen we leren van het succes van de autogordel?

- Wetgeving (productie en gebruik)
- Strafrechtelijke gevolgen → boete 140 euro
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