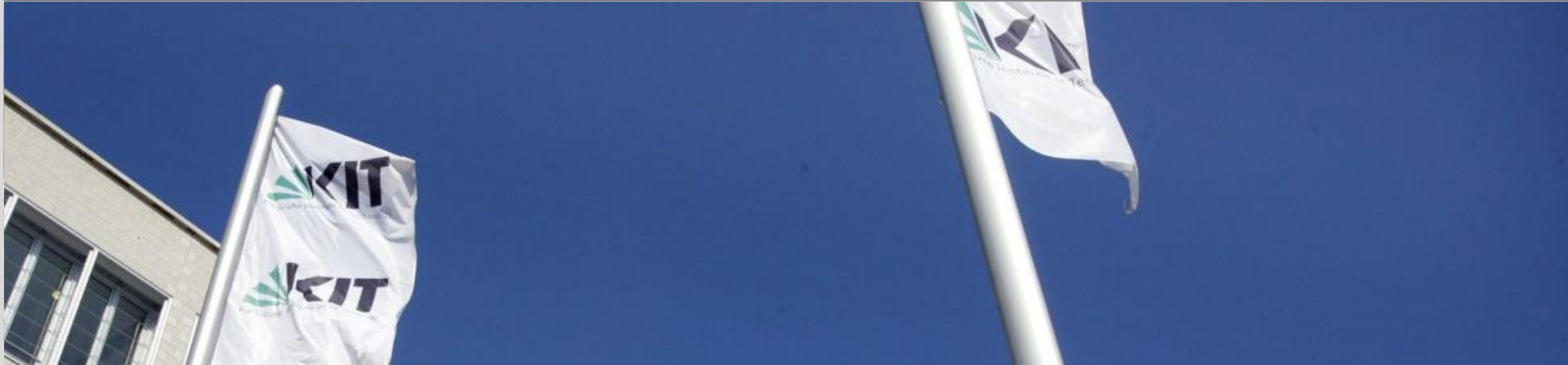


# How effective is nudging? Evidence and conclusions for our everyday life

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# Agenda

1

About me

2

What is nudging and why bother about it?

3

Results of meta study on nudging effectiveness

4

Nudging in federal government of Germany

5

Discussion

## About me



Business administration and economics by training



Worked in banking myself (Commerzbank)



Completed a part-time PhD (and wrote a book about part-time PhDs)



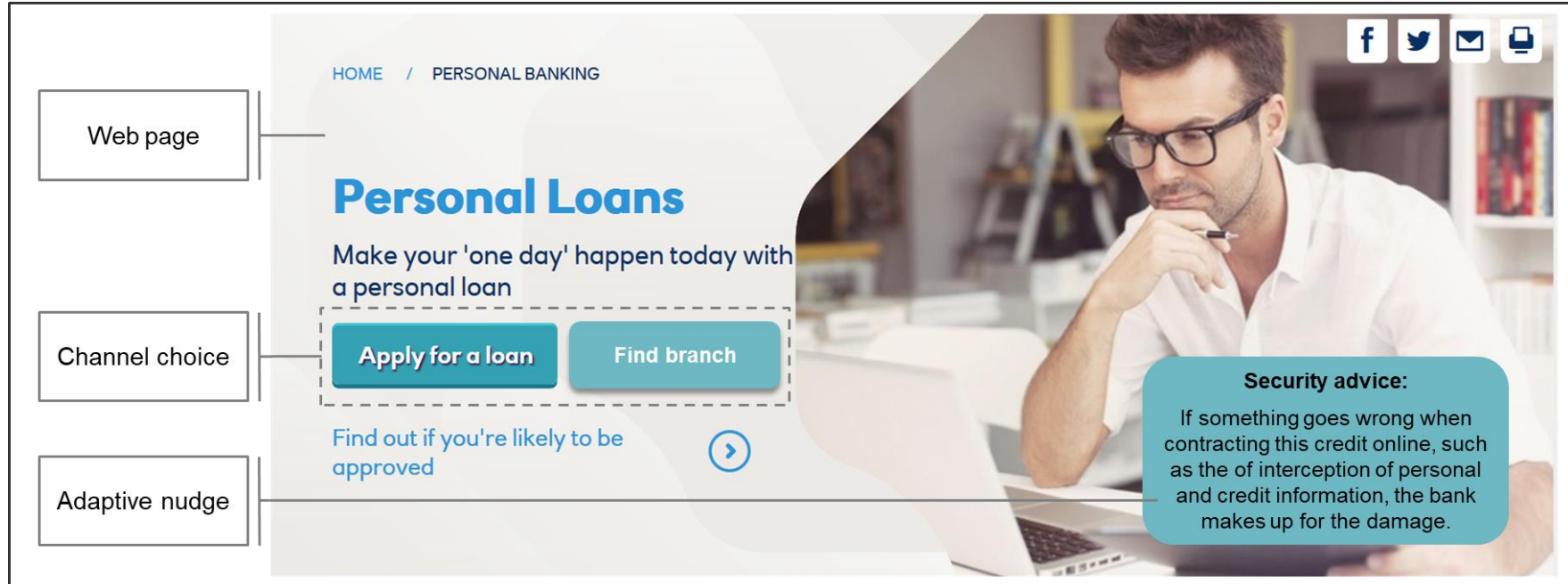
Conducted several (digital) nudging studies myself



Now working for a Federal German Ministry in Berlin



# (Not) Nudging channel choices in banking



The image shows a screenshot of a banking website's 'Personal Loans' page. The page features a navigation bar with 'HOME / PERSONAL BANKING', a main heading 'Personal Loans', a sub-heading 'Make your 'one day' happen today with a personal loan', and two buttons: 'Apply for a loan' and 'Find branch'. Below these buttons is a link 'Find out if you're likely to be approved' with a right-pointing arrow. A 'Security advice' box is overlaid on the right side of the page. On the left, three boxes with lines pointing to the page elements are labeled 'Web page', 'Channel choice', and 'Adaptive nudge'. The background of the page is a photograph of a man with glasses looking at a laptop.

HOME / PERSONAL BANKING

## Personal Loans

Make your 'one day' happen today with a personal loan

[Apply for a loan](#) [Find branch](#)

[Find out if you're likely to be approved](#)

**Security advice:**  
If something goes wrong when contracting this credit online, such as the of interception of personal and credit information, the bank makes up for the damage.

Web page

Channel choice

Adaptive nudge

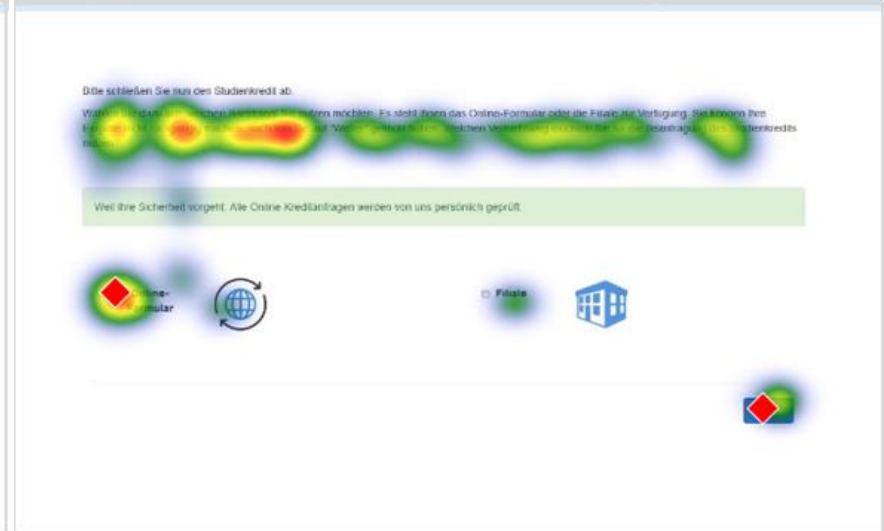
Source: Hummel et al. (2017)

# Why nudging might not work: Evidence from eye-tracking study

Some users noted the green nudge...



... while others didn't.

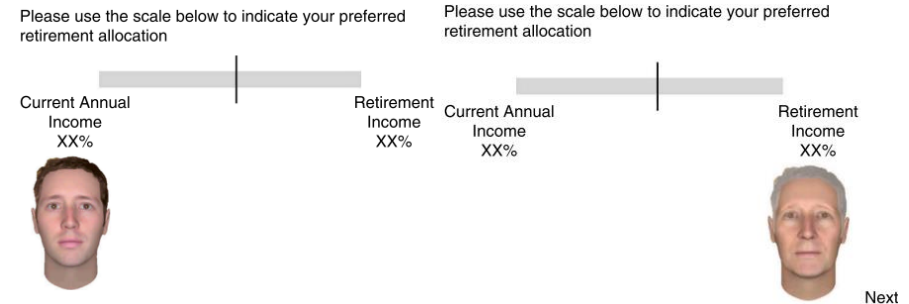


Source: Hummel et al. (2018)

# Quantitative literature review on “How effective is nudging?”

- Nudging widely used, but effectiveness not clear Halpern 2016; Sunstein 2017
- We analyzed nudging studies to extract effect sizes
- Methodology:
  - Systematic literature review
  - Follow nudge definition
  - Studies from 2008 to 2017
- We collected 319 data points across 100 studies

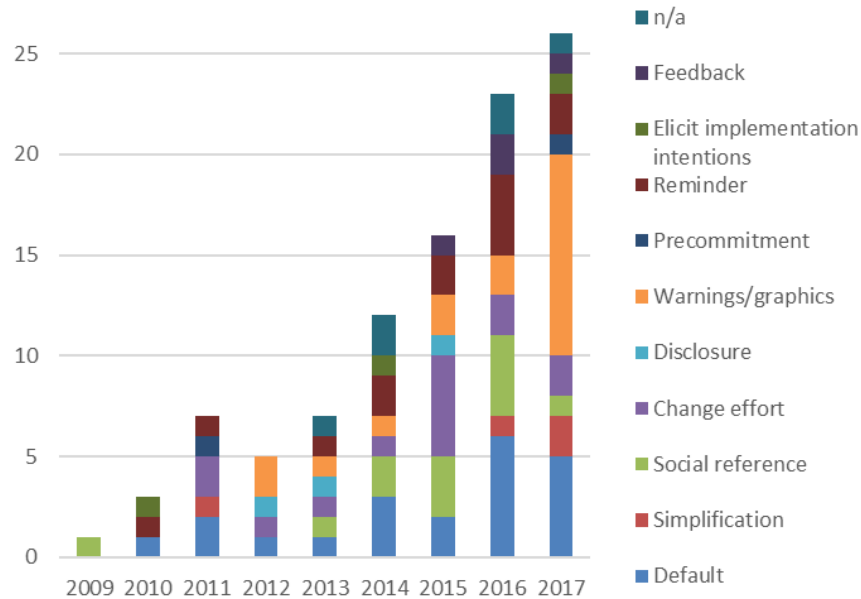
## Example retirement savings (Hershfield et al. 2011)



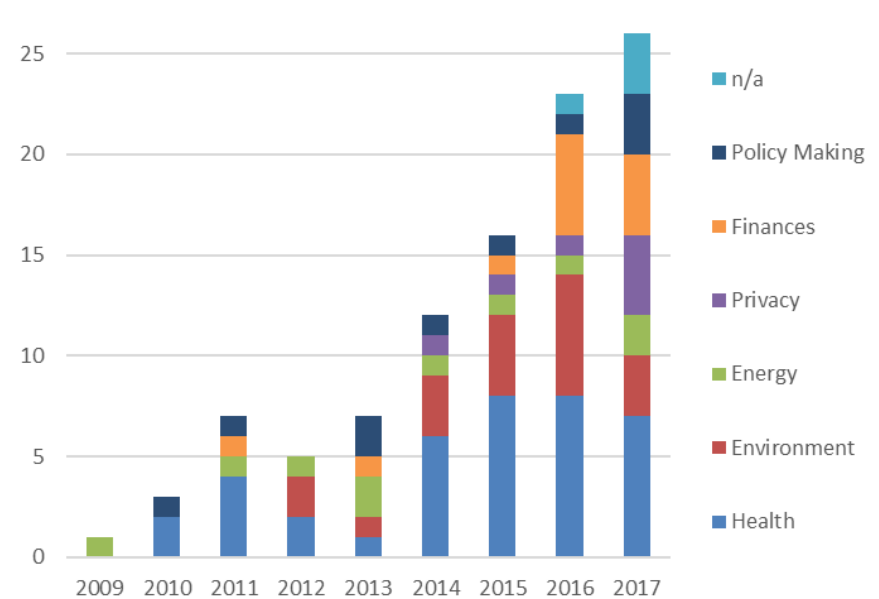
- Use age-progressed pictures of future self
- Increases retirement savings by 30 to 40% (6.76% nudge vs. 5.20% control condition)

# Number of papers per year by category and context

## Distribution of papers according to category

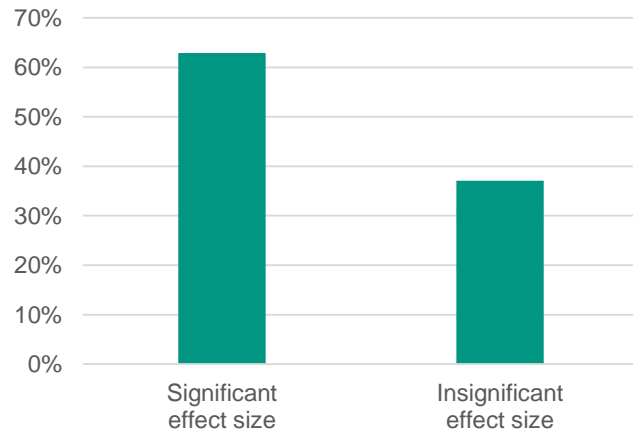


## Distribution of papers according to context



# Results on nudging effectiveness and distribution by context

% of data points by significance



- About 62% of nudges significant
- Median effect size of 21%

Nudges by context (full list see appendix)

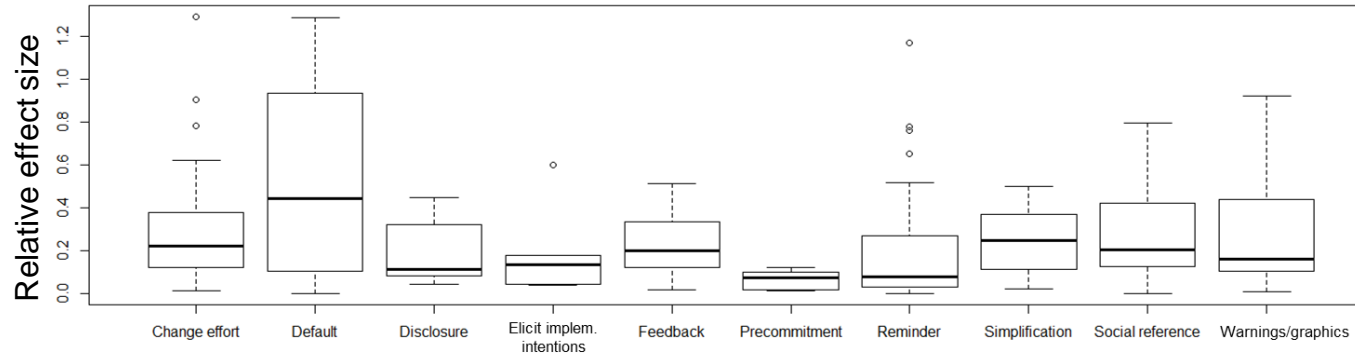
Nudge	Health	Environ-ment	Energy	Privacy	Finance
Default	9	18	4	3	15
Social norm	3	26	4	2	8
Change effort	35	1	0	0	0
Warning	17	11	0	13	0
Reminder	11	1	0	0	10

- Most nudges in health and environment context
- Defaults and warnings used mostly but dependent on context



# Boxplots of quantitative results by type of nudge and context

Boxplots of effect sizes of different type of nudges

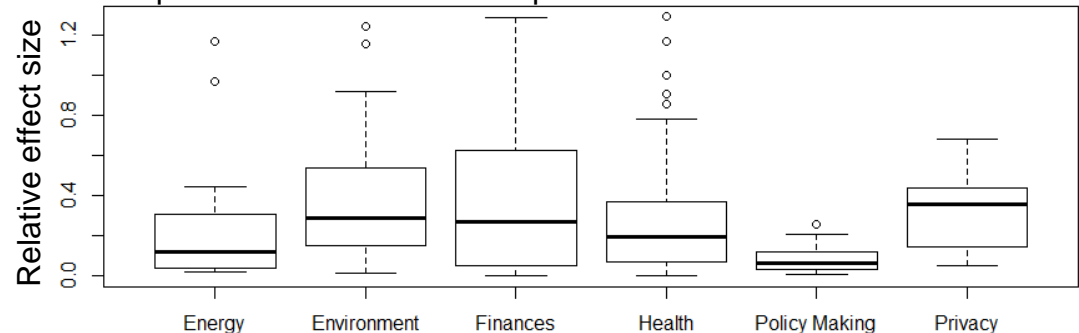


■ Defaults most effective than other nudges

■ Context doesn't matter

■ Finances with highest range

Boxplot of relative effect sizes per context



# Summary of findings and guidance for nudging



## Findings

- Defaults used the most, health and environment context studied extensively
- Nudging less effective than proclaimed (only 63% of all data points)
- Category of nudge influences effect size; context does not



## Guidance for effective and ethical nudging

- „Nudge for good“
- Understand users or consumers (example of eye-tracking)
- Do pre-testing (if you can)
- Use defaults (if you are allowed to)
- Use tailored nudges (see our research on “Who can be nudged”, Ingendahl et al. 2020)

# Nudging in the federal government of Germany

- Since 2015 unit in the Federal Chancellery of Germany called “govern effectively”
- They avoid the term “nudging” as it is associated with manipulation and they use “boosting” instead
- Work on projects with German Ministries, e.g. how to improve tax declaration forms together with the Federal Ministry of Finance
- Find more information on their website ([here](#))



Source: wirksam regieren

**Anlage N 2016**  
Einkünfte aus nichtselbständiger Arbeit

Wann Sie Einkünfte aus einer Anstellung erhalten, haben Sie falls auch die Anlage N-KIT aus.

1 | **Vorname:** \_\_\_\_\_ Bitte beachten Sie: Auch bei  
2 | **Nachname:** \_\_\_\_\_ Zusammenveranlagung muss jeder  
3 | **Steueridentifikationsnummer:** \_\_\_\_\_ Ehe- bzw. Lebenspartner/Partn-  
4 | **ETW:**  Einkünfte aus einer Anstellung  Einkünfte aus einer Anstellung  
5 | **ETW:**  Einkünfte aus einer Anstellung  Einkünfte aus einer Anstellung  Einkünfte aus einer Anstellung  
6 | Angaben für:  Abgabe vereinzelte Person/Bei Zusammenveranlagung Person A  Zusammenveranlagung Person B

**ARBEITSLOHN**  
Angaben, die auf Ihre einkommensteuerliche Einkunftsverteilung einwirken: z.B. Berufsaufstiebs, Leiharbeit, Nebenberufstätigkeit, etc.  
Angabe des Ehepartners (falls vorhanden) und Angabe des Lebenspartners (falls vorhanden) ist Pflicht. Bitte beachten Sie, dass die Angabe des Ehepartners/Lebenspartners für die Einkunftsverteilung relevant ist.

	Staatlich	NT	Steuernummer 1, Umsatzsteuer
7   Berufsaufstiebs	in 3		
8   Leiharbeit	in 4		
9   Nebenberufstätigkeit	in 5		
10   Kirchensteuer	in 6		
11   Kirchensteuer für den Ehe- bzw. Lebenspartner	in 7		

**Versorgungsbezüge, Entschädigungen, Arbeitslohn für mehrere Jahre sowie Lohn- und Entgeltersatzleistungen**

	Arbeitslohn	Versorgungsbezüge	Entschädigungen	Lohn- und Entgeltersatzleistungen
12   Im Berufsaufstiebs enthalten	in 8			
13   Versorgungsbezüge für den Ehe- bzw. Lebenspartner	in 9			
14   Entschädigungen/Arbeitslohn für mehrere Jahre	in 10			
15   Bezüge der Versorgungsbezüge für den Ehe- bzw. Lebenspartner	in 11			
16   Lohnersatzleistungen	in 12			

Source: wirksam regieren

**Thank you for your attention!**



# Appendix

# Nudging and digital nudging

**Nudge** is “any aspect of the choice architecture that alters people’s behavior in a predictable way without forbidding any options or significantly changing their economic incentives”

Source: Thaler and Sunstein (2008)



Source: Fraser Institute

**Digital nudging** “is the use of user-interface design elements to guide people’s behavior in digital choice environments”

Source: Weinmann et al. (2016)

**Carbon offset payment**

This flight produces 348kg CO<sub>2</sub> emissions per person.

Compensate the CO<sub>2</sub> emissions of your flight:  
(Please use the slider to adjust donation amount)

€0 €1 €2 €3 €4 €5 €6 €7 €8 €9 €10 €11 €12

*Carbon-offset payment scale*  
Potential initial values are middle (control group), zero (low-treatment group), and maximum (high-treatment group).

**Flight Details**

Departure to Berlin  
SWISS  
07th August 2015  
05:00 PM - 05:45 PM  
49C  
non-stop flight

Return to Zurich  
SWISS  
13th August 2015  
11:20 AM - 02:00 PM  
39C  
non-stop flight

**Payment Details**

Flight: **88C**  
Carbon offset: **12C**

---

Total: **100C**

Source: Székely et al (2016)

# Narrow-down and exclusion criteria

Table 10. Search string, databases and narrow-down of systematic literature review

Database	Keywords	No. of hits	No. of papers with abstract reviews and document screening	No. of full text reviews	No. of papers used for SLR
ScienceDirect	Nudge OR Nudging	549	366	94	32
EBSCOHost	Nudge OR Nudging	1,929	765	173	45
AISel	Nudge OR Nudging	15	15	13	2
Sum database searches		2,493	1,146	280	79
Forward and backward search					21
<b>Total articles included</b>					<b>100</b>

## Exclusion criteria

- Not between 2008 and 2017
- Not mention “nudge” or “nudging”, or not quote Thaler and Sunstein (2008)
- No human behavior
- Exclude policy papers or ethics (e.g. Selinger and Whyte 2011)
- No measurable effects
- Not meet definition of nudging “nudge”, e.g. use financial incentives (Riggs 2017)

## Study 3: Descriptive results – category context matrix

Category	Health	Environ- ment	Energy	Privacy	Finances	Policy making	n/a	Total
Default	9	18	4	3	15	3	10	<b>62</b>
Simplification	0	0	3	1	4	0	4	<b>12</b>
Social reference	3	26	4	2	8	6	0	<b>49</b>
Change effort	35	1	0	0	0	4	1	<b>41</b>
Disclosures	0	0	16	2	0	0	0	<b>18</b>
Warnings	17	11	0	13	0	4	10	<b>55</b>
Precommitment	6	0	0	0	0	0	0	<b>6</b>
Reminders	11	1	0	0	10	12	0	<b>34</b>
Implementation intent.	0	4	3	0	0	1	0	<b>8</b>
Feedback	3	0	2	0	0	2	0	<b>7</b>
n/a	13	10	0	1	3	0	0	<b>27</b>
<b>Total effect sizes</b>	<b>97</b>	<b>71</b>	<b>32</b>	<b>22</b>	<b>40</b>	<b>32</b>	<b>25</b>	<b>319</b>



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