

Risks and Side Effects of Digital Information Technology in Health, Education & Society

Prof. Manfred Spitzer, M.D., Ph.D.

Ulm University

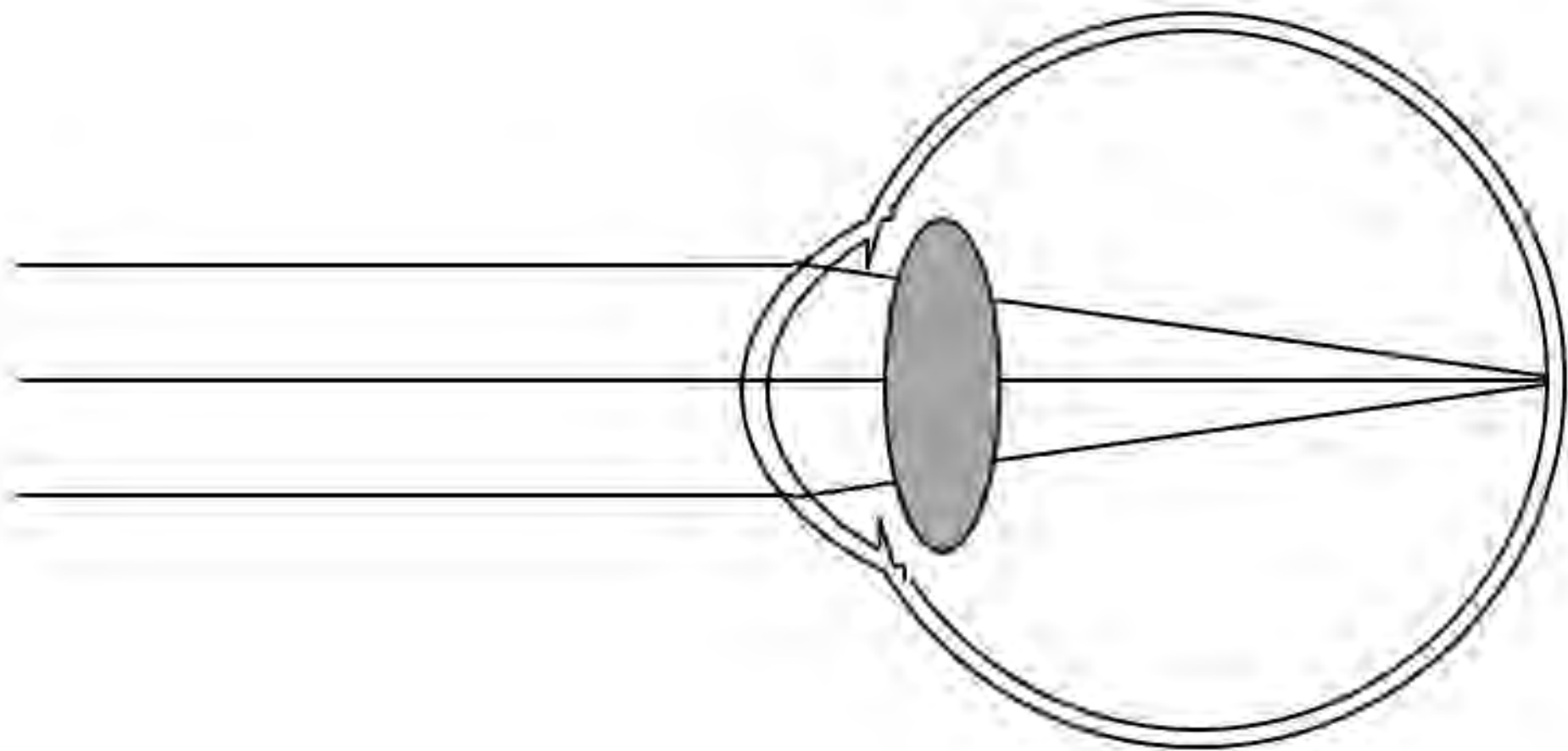
Health: Risks and Side Effects (body)

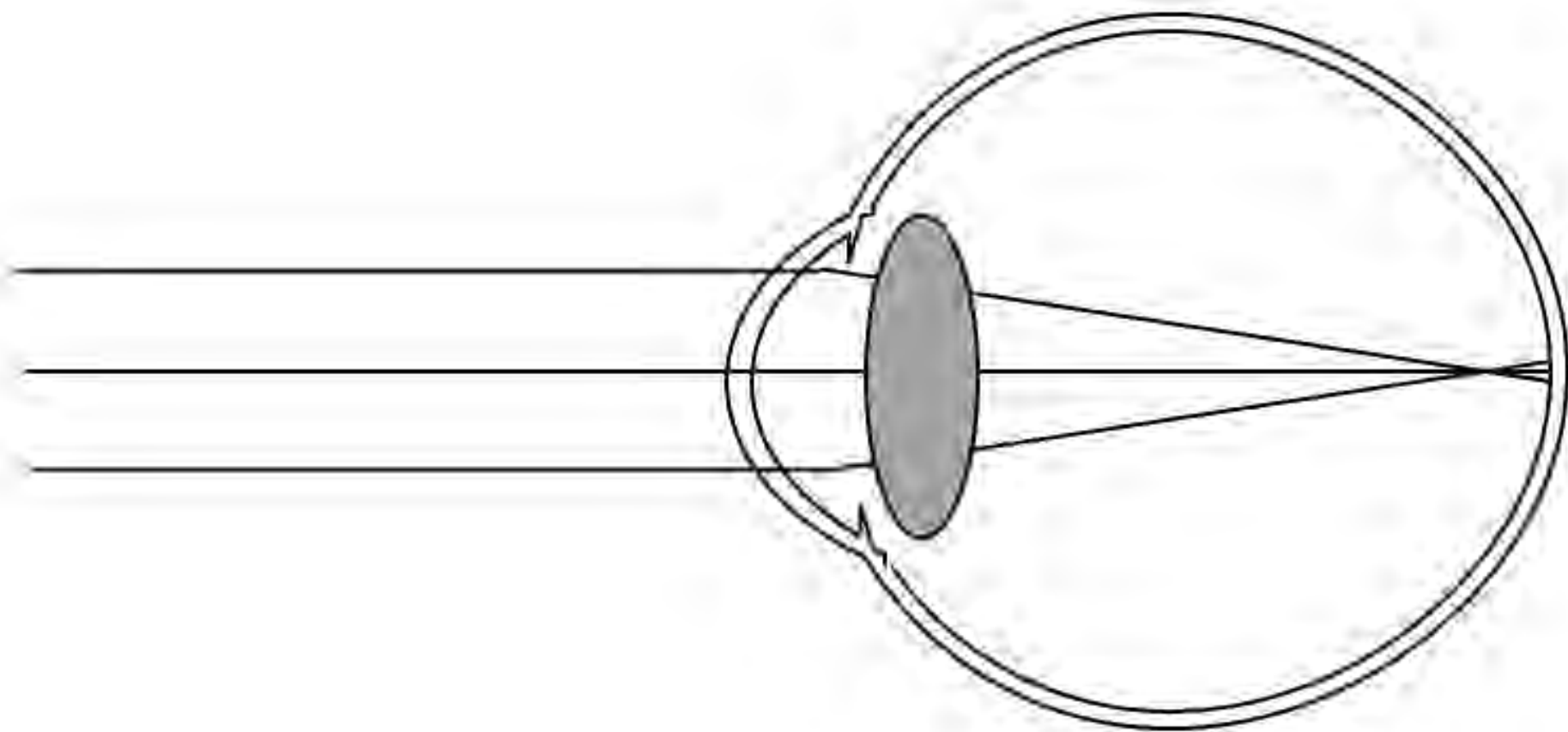
- bad body posture
- Overweight
- Diabetes (Stroke, heart attack)
- Hypertension (Stroke, heart attack)
- Short sightedness
- Sleep disorders
- Stress (Infections, cancer)
- high-risk behavior (road accidents, STMs)

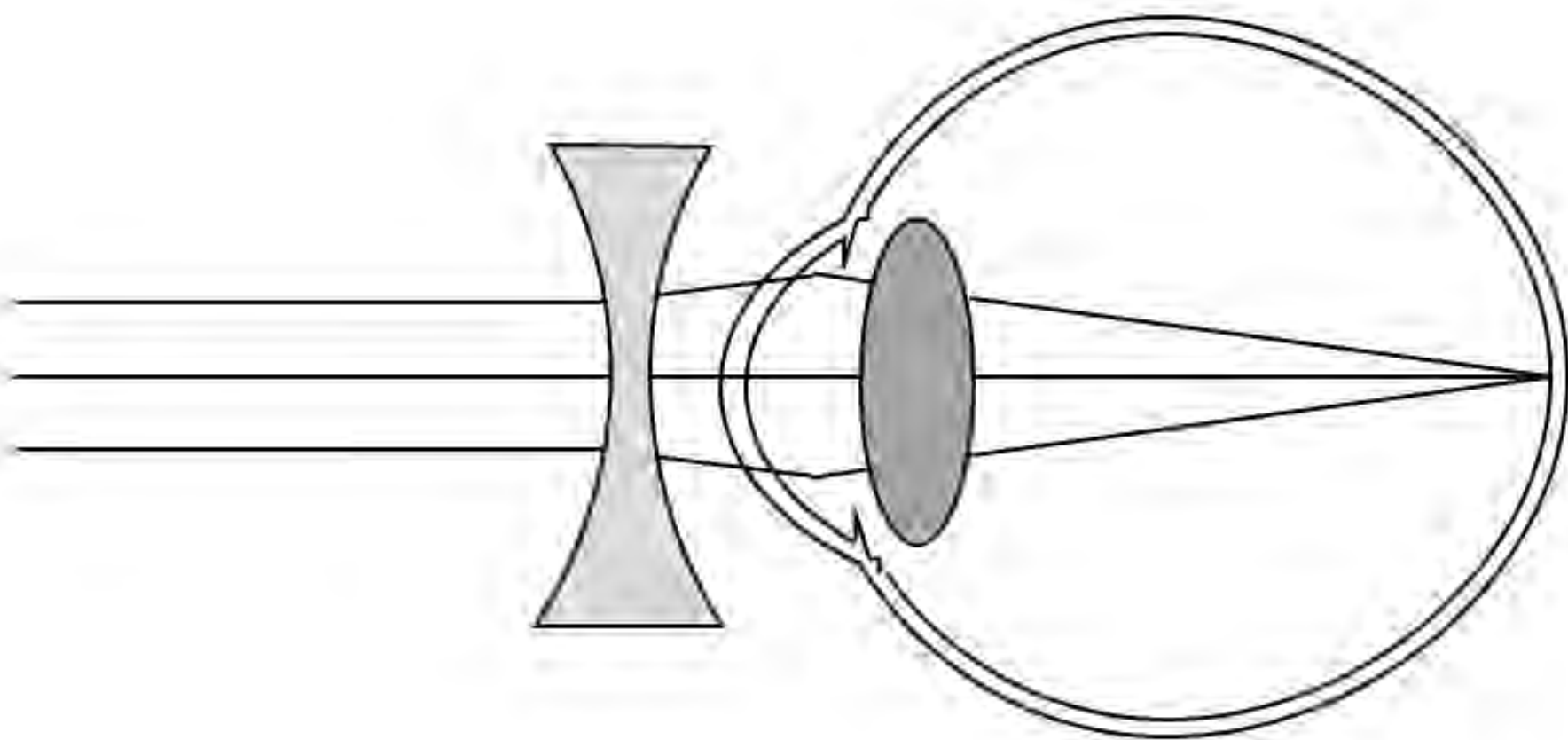
Risks and Side Effects (body)

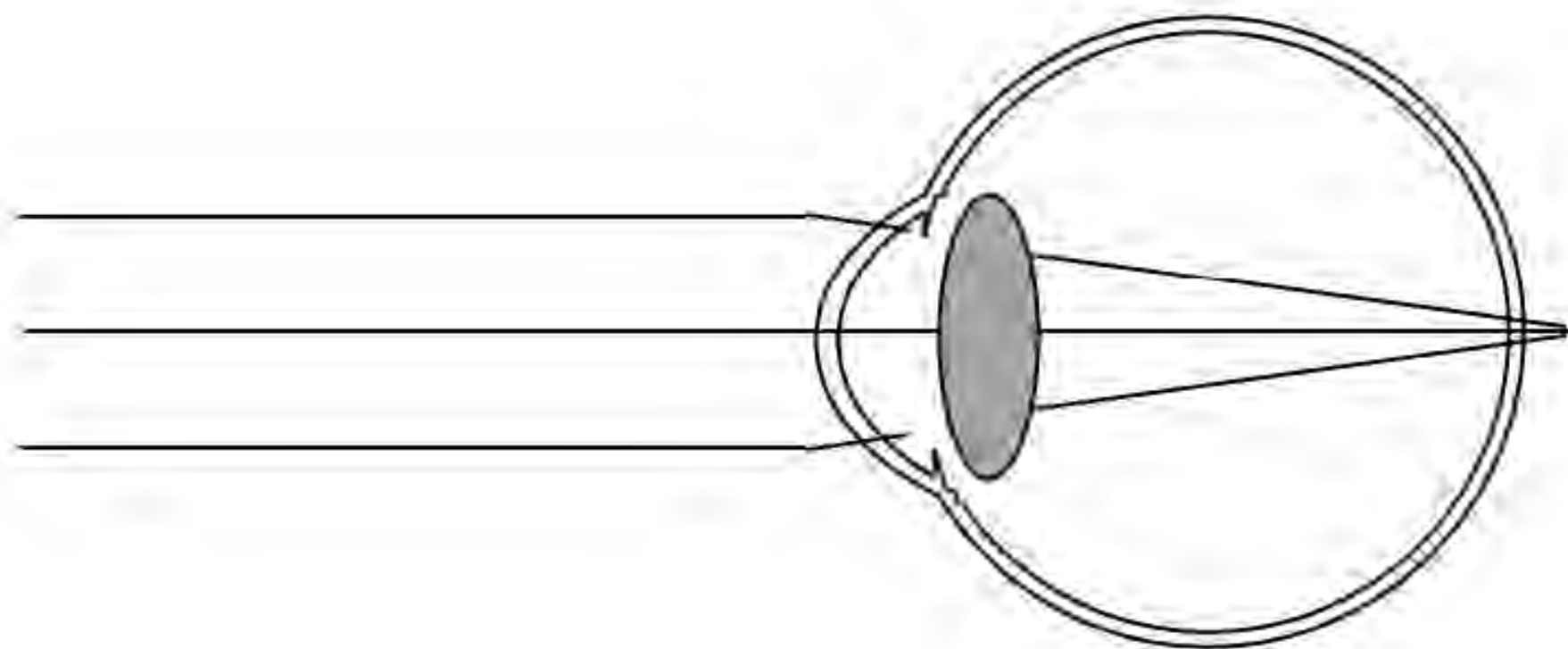
- bad body posture
- Overweight
- Diabetes (Stroke, heart attack)
- Hypertension (Stroke, heart attack)
- Short sightedness (Myopia)
- Sleep disorders
- Stress (Infections, cancer)
- high-risk behavior (road accidents, STMs)

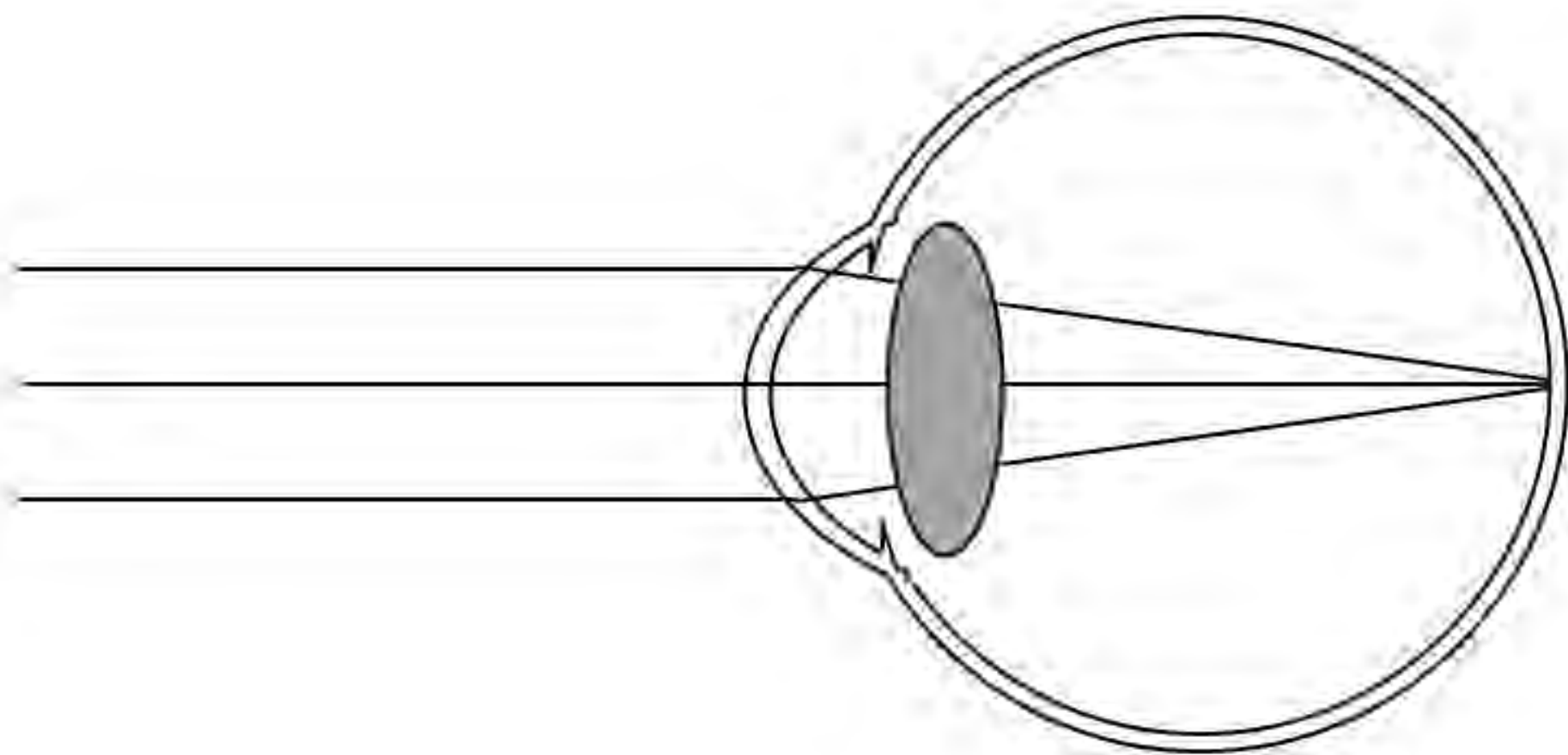


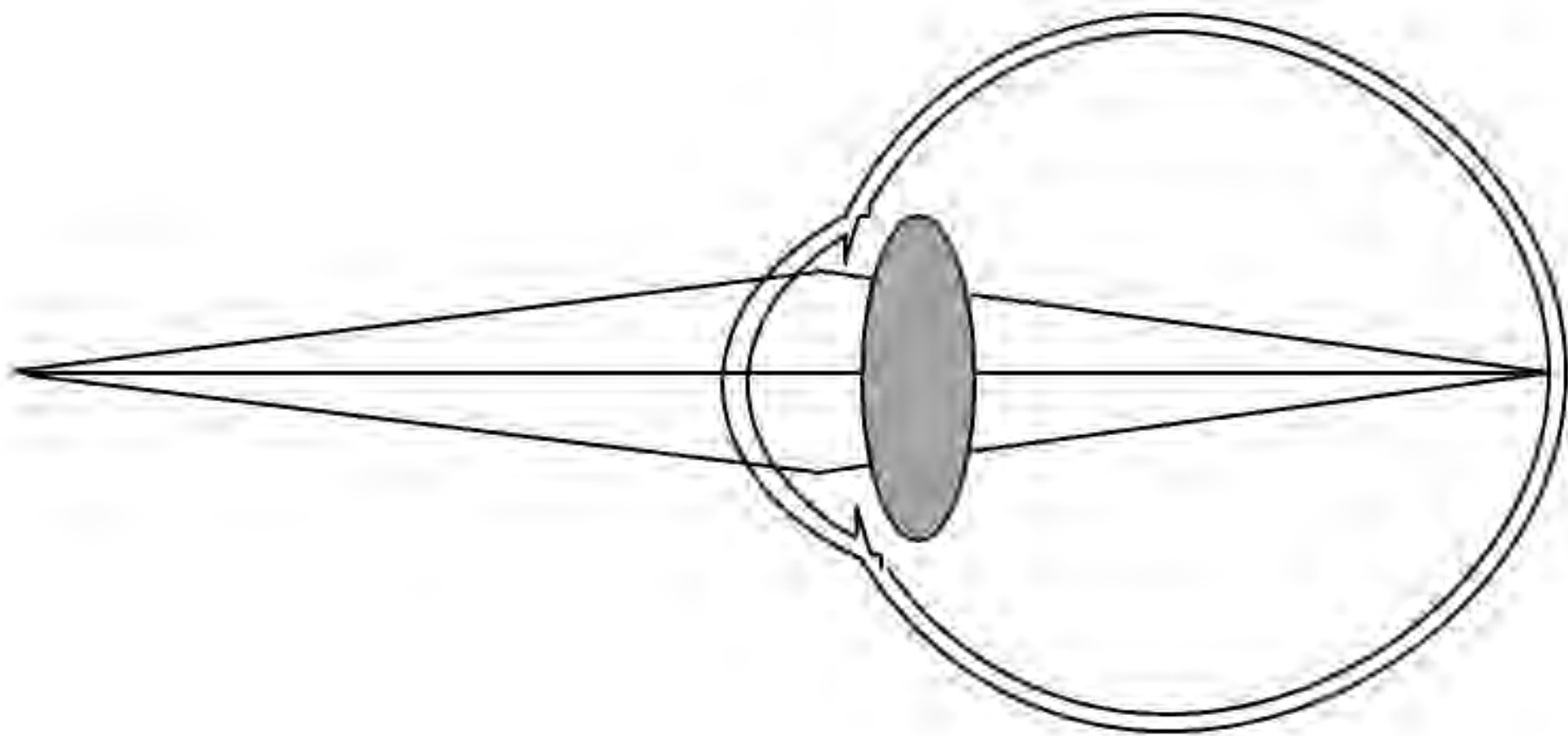


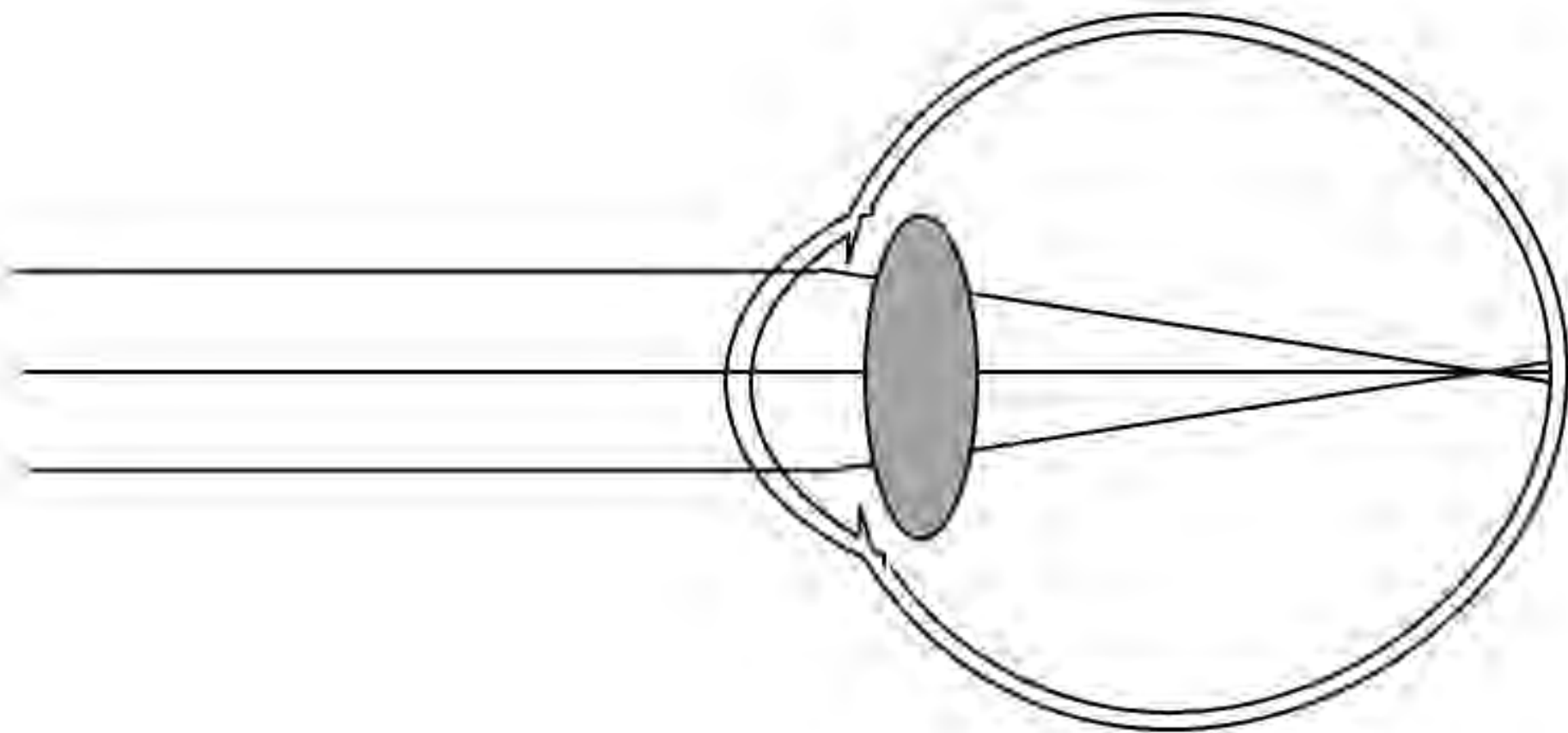












Prevalence of refractive error in Europe: the European Eye Epidemiology (E³) Consortium

Katie M. Williams^{1,2} · Virginie J. M. Verhoeven^{3,4} · Phillippa Cumberland⁵ · Geir Bertelsen^{6,7} · Christian Wolfram⁸ · Gabriëlle H. S. Buitendijk^{3,4} · Albert Hofman⁴ · Cornelia M. van Duijn⁴ · Johannes R. Vingerling^{3,4} · Robert W. A. M. Kuijpers^{3,4} · René Höhn⁸ · Alireza Mirshahi⁸ · Anthony P. Khawaja⁹ · Robert N. Luben⁹ · Maja Gran Erke^{6,7} · Therese von Hanno^{10,11} · Omar Mahroo¹ · Ruth Hogg¹² · Christian Gieger¹³ · Audrey Cougnard-Grégoire^{14,15} · Eleftherios Anastasopoulos¹⁶ · Alain Bron¹⁷ · Jean-François Dartigues^{14,15} · Jean-François Korobelnik^{14,15} · Catherine Creuzot-Garcher¹⁷ · Fotis Topouzis¹⁶ · Cécile Delcourt^{14,15} · Jugnoo Rahi^{5,18} · Thomas Meitinger^{19,20} · Astrid Fletcher²¹ · Paul J. Foster^{9,18} · Norbert Pfeiffer⁸ · Caroline C. W. Klaver^{3,4} · Christopher J. Hammond^{1,2}

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Relative frequency of short sightedness in people under the age of 20 years

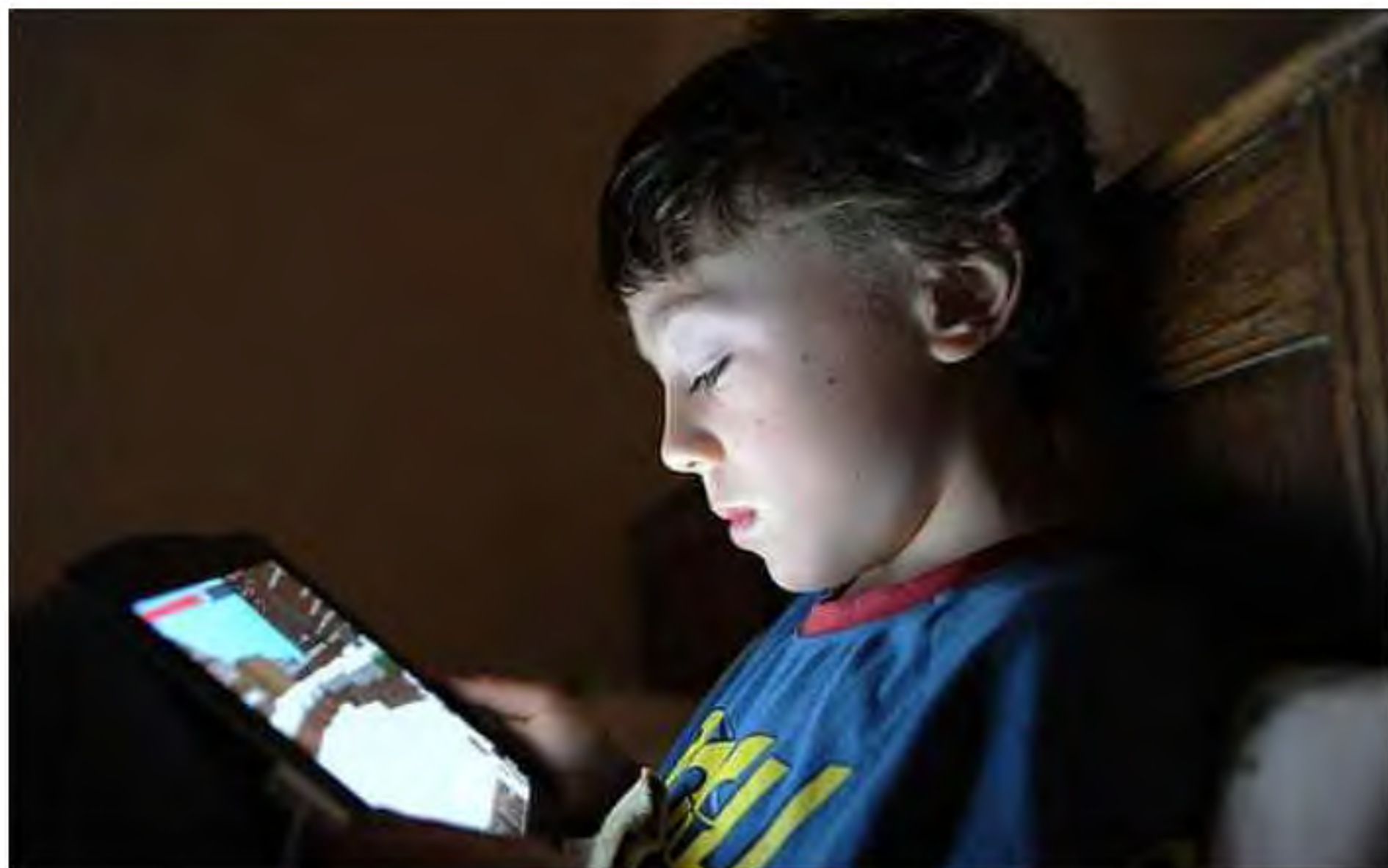
- (for comparison) retired people, global: 1-5%
- Europe: 30%
- China: 80%
- South-Korea: >95%

What to do about it?

- It is caused by interfering with normal development
- There is no right way to look at a smartphone screen as long as your eyes develop.
- The dosage makes the poison!
- Therefore, we have to protect children and adolescents!
- Adults: no action needed

Risks and Side Effects (body)

- bad body posture
- Overweight
- Diabetes (Stroke, heart attack)
- Hypertension (Stroke, heart attack)
- Short sightedness
- Sleep disorders
- Stress (Infections, cancer)
- high-risk behavior (road accidents, STMs)



Downloaded from <http://bmjopen.bmj.com/> on February 13, 2015 - Published by group.bmj.com

Open Access

Research

BMJ Open Sleep and use of electronic devices in adolescence: results from a large population-based study

Mari Hysing,¹ Ståle Pallesen,^{2,3} Kjell Morten Stormark,¹ Reidar Jakobsen,¹
Astri J Lundervold,^{1,4} Børge Sivertsen^{5,6,7}

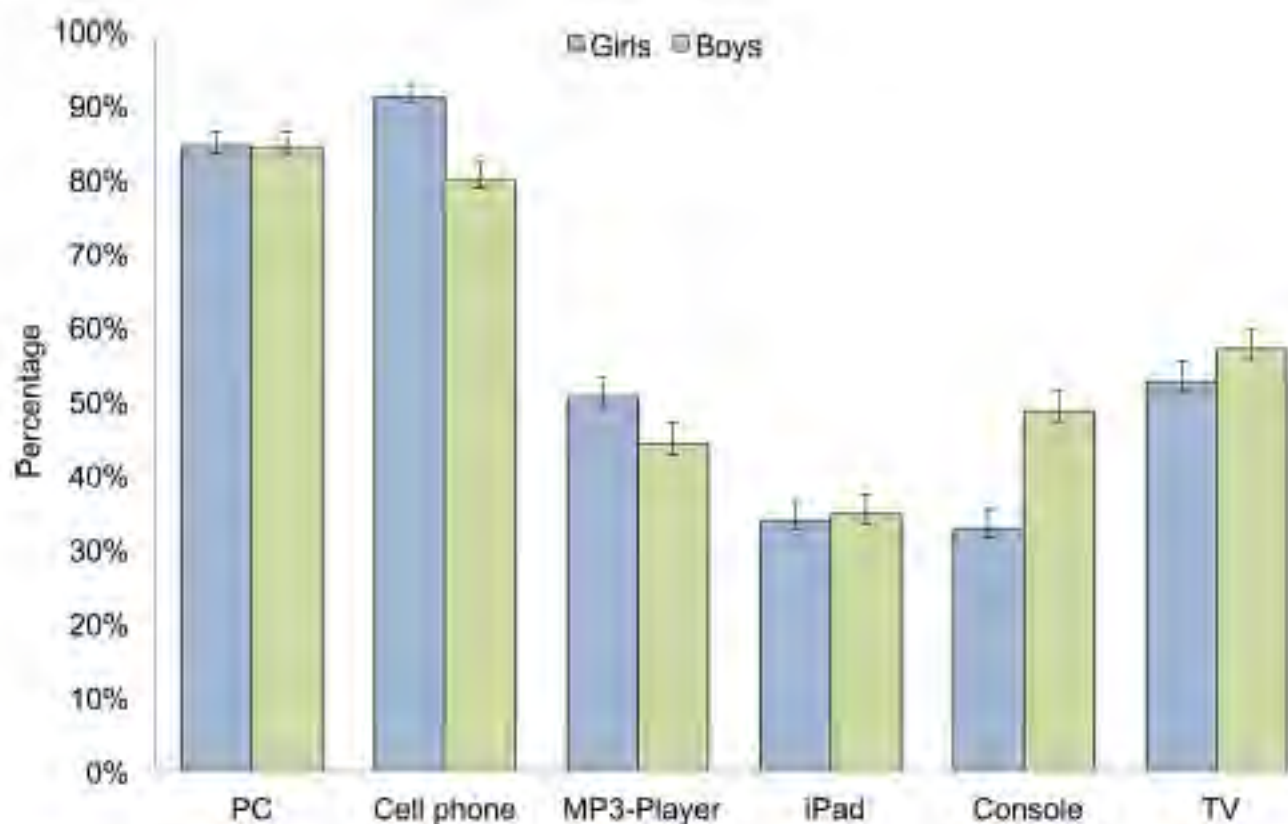
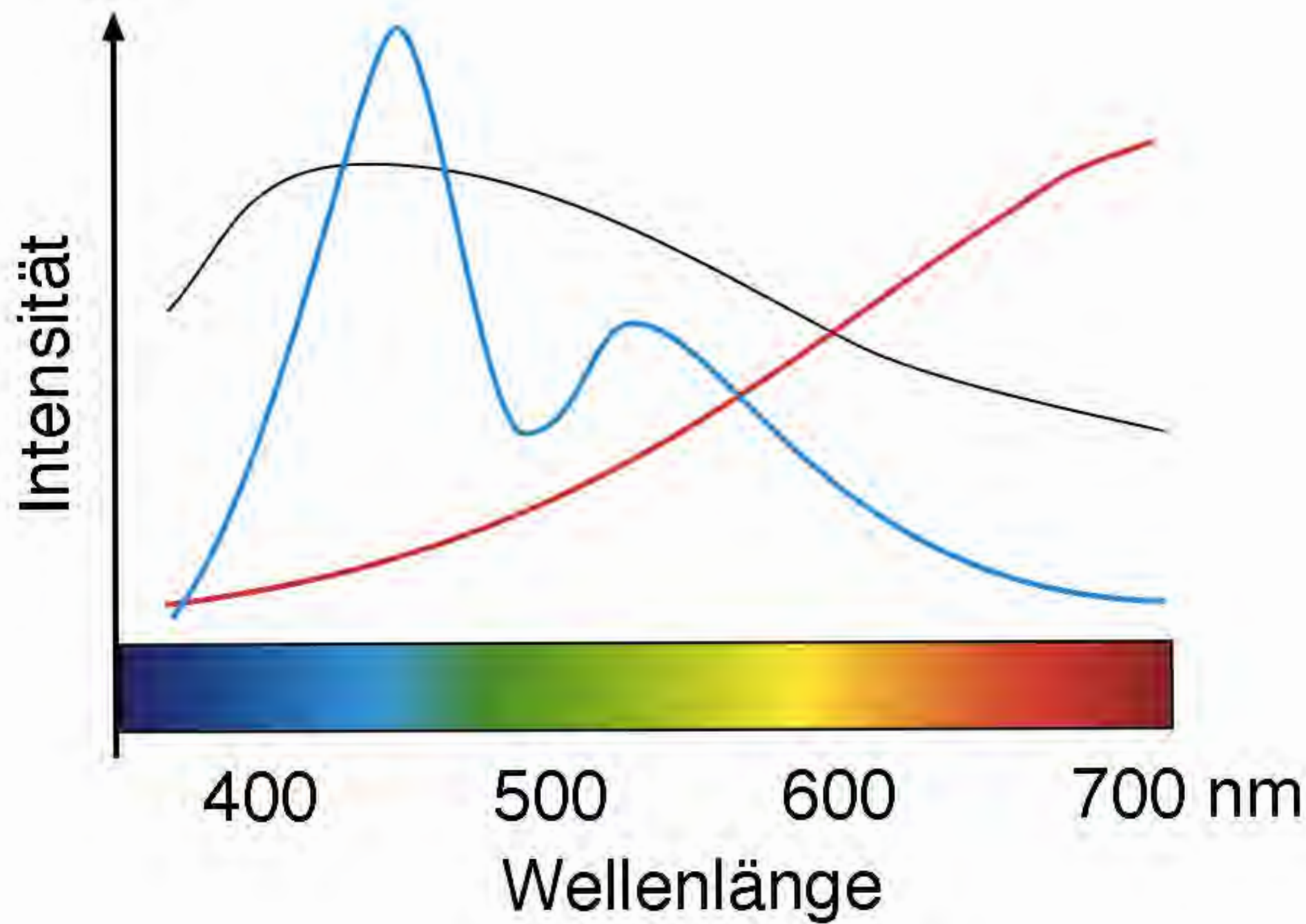


Figure 1 Use of electronic devices during the last hour before bedtime among girls and boys in the youth@hordaland study (n=9846). Error bars represent 95% CIs.



Evening use of light-emitting eReaders negatively affects sleep, circadian timing, and next-morning alertness

Anne-Marie Chang^{a,b,1,2}, Daniel Aeschbach^{a,b,c}, Jeanne F. Duffy^{a,b}, and Charles A. Czeisler^{a,b}

^aDivision of Sleep and Circadian Disorders, Departments of Medicine and Neurology, Brigham and Women's Hospital, Boston, MA 02115; ^bDivision of Sleep Medicine, Harvard Medical School, Boston, MA 02115; and ^cInstitute of Aerospace Medicine, German Aerospace Center, 51147 Cologne, Germany

Edited by Joseph S. Takahashi, Howard Hughes Medical Institute, University of Texas Southwestern Medical Center, Dallas, TX, and approved November 26, 2014 (received for review September 24, 2014)

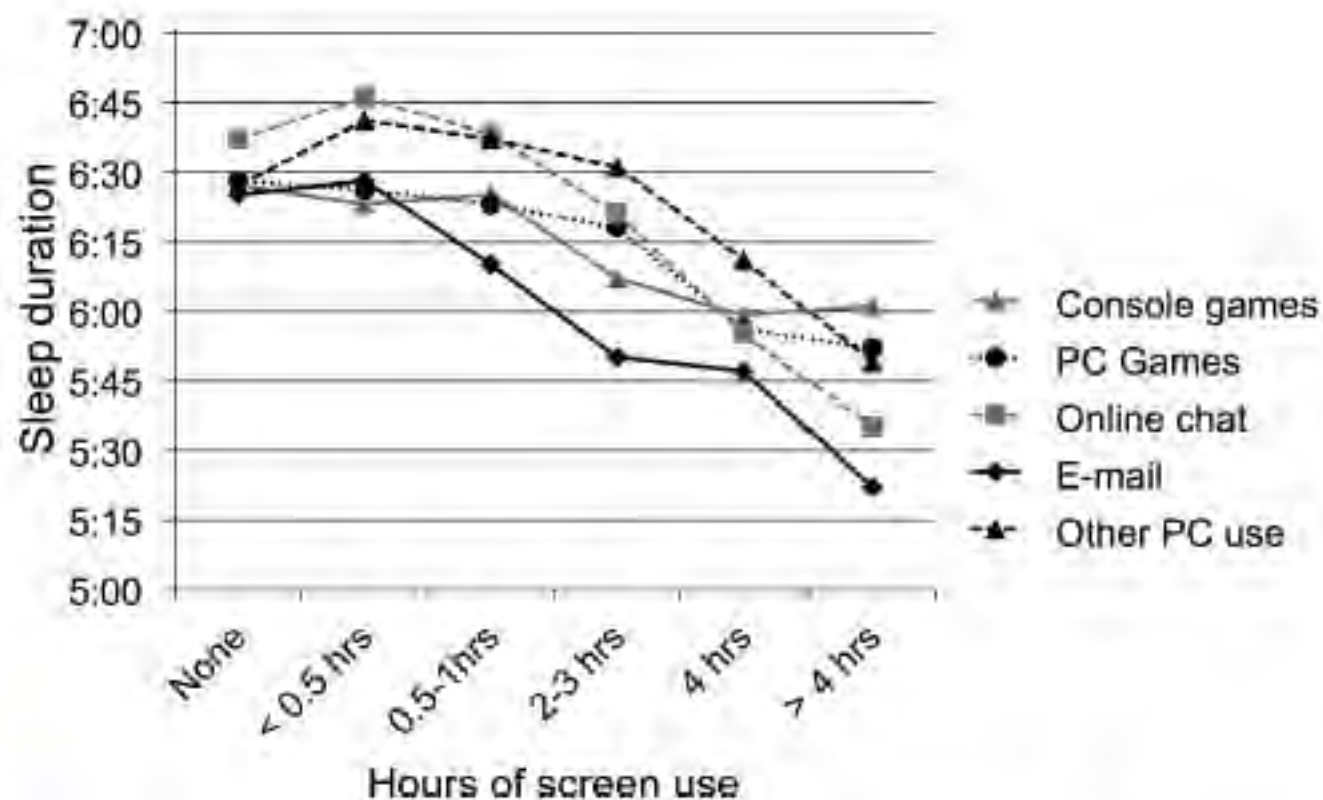


Figure 3 Sleep duration and hours of screen use among adolescents in the youth@hordaland study (n=9846).

What to do?

- Any age!
- Looking the right way – no way?
- The Timing is the poison:
- No color screens after dinner
- In children and adolescents this is really important

Risks and Side Effects (body)

- bad body posture
- Overweight
- Diabetes (Stroke, heart attack)
- Hypertension (Stroke, heart attack)
- Short sightedness
- Sleep disorders
- Stress (Infections, cancer)
- high-risk behavior (road accidents, STMs)

Health: Risks and Side Effects (mind)

- Addiction
- Aggression
- Anxiety
- Depression
- decreased empathy
- decreased life satisfaction

Risks and Side Effects (mind)

- Addiction
- Aggression
- Anxiety
- Depression
- decreased empathy
- decreased life satisfaction

Facebook Use Predicts Declines in Subjective Well-Being in Young Adults

Ethan Kross^{1*}, Philippe Verduyn², Emre Demiralp¹, Jiyoung Park¹, David Seungjae Lee¹, Natalie Lin¹, Holly Shablack¹, John Jonides¹, Oscar Ybarra¹

¹ Psychology Department, University of Michigan, Ann Arbor, Michigan, United States of America, ² Psychology Department, University of Leuven, Leuven, Belgium

Abstract

Over 500 million people interact daily with Facebook. Yet, whether Facebook use influences subjective well-being over time is unknown. We addressed this issue using experience-sampling, the most reliable method for measuring in-vivo behavior and psychological experience. We text-messaged people five times per day for two-weeks to examine how Facebook use influences the two components of subjective well-being: how people feel moment-to-moment and how satisfied they are with their lives. Our results indicate that Facebook use predicts negative shifts on both of these variables over time. The more people used Facebook at one time point, the worse they felt the next time we text-messaged them; the more they used Facebook over two-weeks, the more their life satisfaction levels declined over time. Interacting with other people "directly" did not predict these negative outcomes. They were also not moderated by the size of people's Facebook networks, their perceived supportiveness, motivation for using Facebook, gender, loneliness, self-esteem, or depression. On the surface, Facebook provides an invaluable resource for fulfilling the basic human need for social connection. Rather than enhancing well-being, however, these findings suggest that Facebook may undermine it.

Citation: Kross E, Verduyn P, Demiralp E, Park J, Lee DS, et al. (2013) Facebook Use Predicts Declines in Subjective Well-Being in Young Adults. PLoS ONE 8(8): e69841. doi:10.1371/journal.pone.0069841

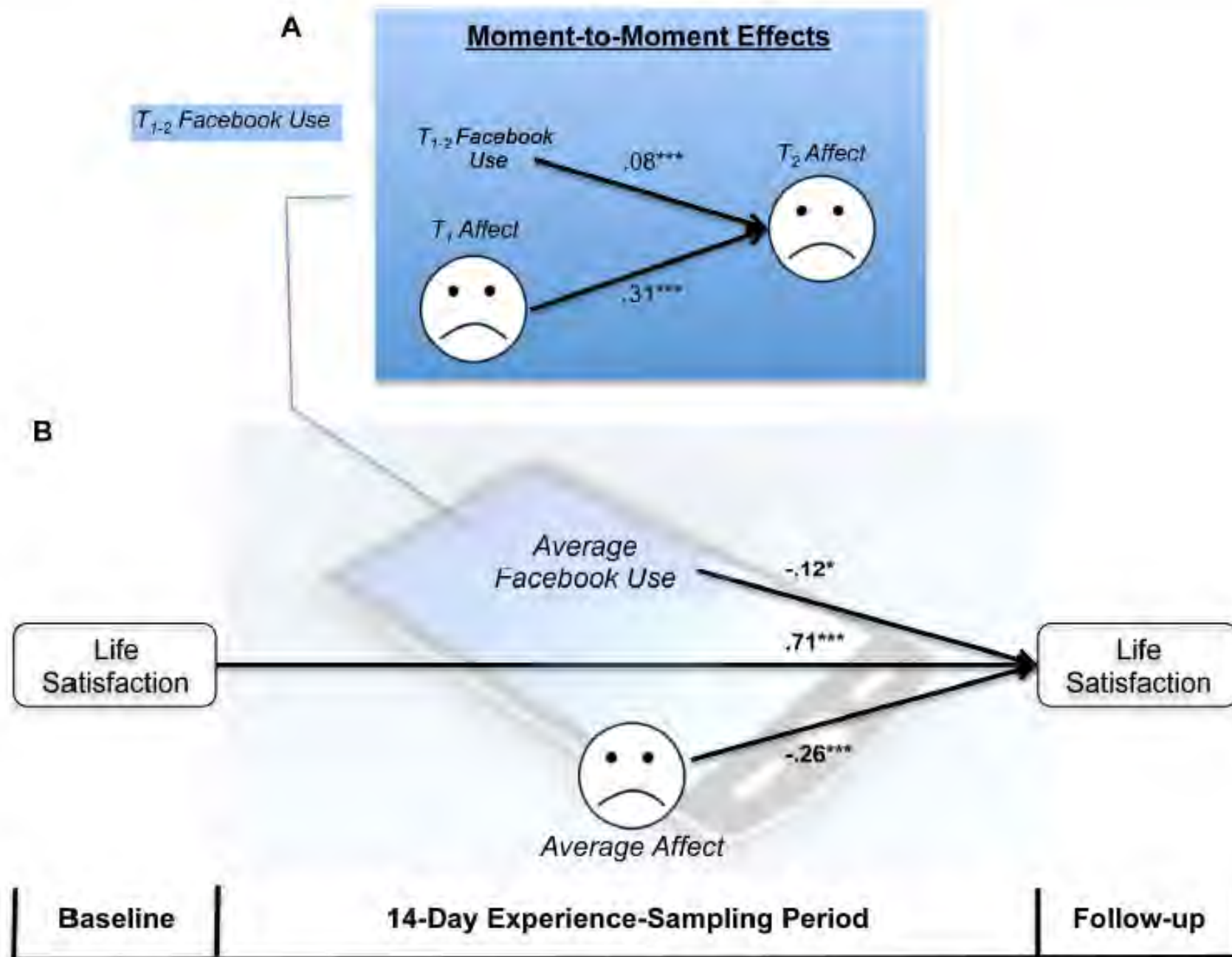


Figure 1. Facebook use predicts declines in affect and life satisfaction over time.

Facebook Depression

- Large study in UK

Facebook Depression

- Large study in UK
- Very large study US

Increases in Depressive Symptoms, Suicide-Related Outcomes, and Suicide Rates Among U.S. Adolescents After 2010 and Links to Increased New Media Screen Time

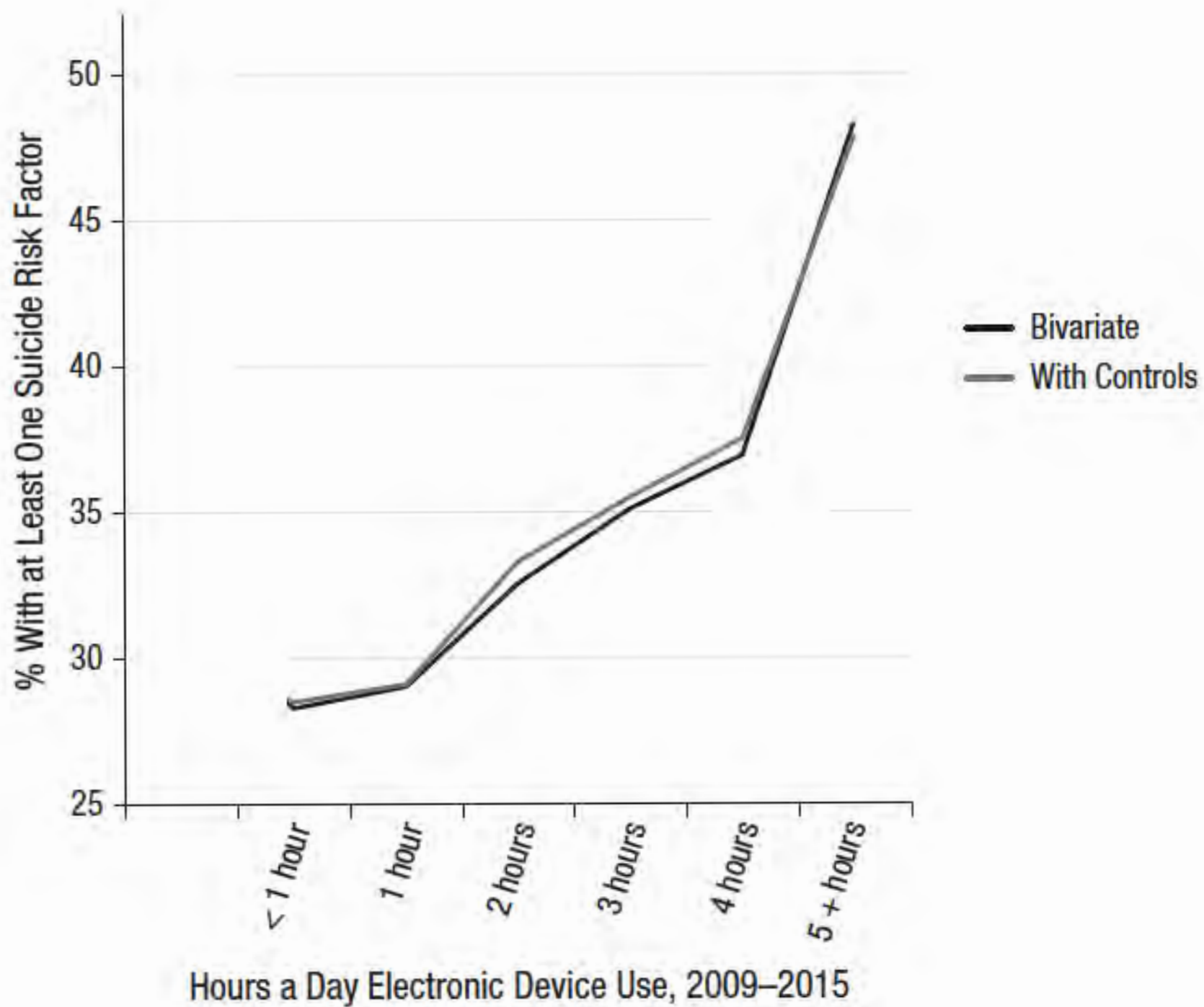
Jean M. Twenge¹, Thomas E. Joiner², Megan L. Rogers², and Gabrielle N. Martin¹

¹San Diego State University and ²Florida State University

Psychological Science,
November 2017

Abstract

In two nationally representative surveys of U.S. adolescents in grades 8 through 12 ($N = 506,820$) and national statistics on suicide deaths for those ages 13 to 18, adolescents' depressive symptoms, suicide-related outcomes, and suicide rates increased between 2010 and 2015, especially among females. Adolescents who spent more time on new media (including social media and electronic devices such as smartphones) were more likely to report mental health issues, and adolescents who spent more time on nonscreen activities (in-person social interaction, sports/exercise, homework, print media, and attending religious services) were less likely. Since 2010, iGen adolescents have spent more time on new media screen activities and less time on nonscreen activities, which may account for the increases in depression and suicide. In contrast, cyclical economic factors such as unemployment and the Dow Jones Index were not linked to depressive symptoms or suicide rates when matched by year.



Risks and Side Effects (mind)

- Addiction
- Aggression
- Anxiety
- Depression
- decreased empathy
- decreased life satisfaction

Adolescent Screen Time and Attachment to Parents and Peers

Rosalina Richards, PhD; Rob McGee, PhD; Sheila M. Williams, DSc; David Welch, PhD; Robert J. Hancox, MD

Conclusions: Screen time was associated with poor attachment to parents and peers in 2 cohorts of adolescents 16 years apart. Given the importance of attachment to parents and peers in adolescent health and development, concern about high levels of screen time among adolescents is warranted.

Arch Pediatr Adolesc Med. 2010;164(3):258-262

Changes in Dispositional Empathy in American College Students Over Time: A Meta-Analysis

Personality and Social Psychology Review
15(2) 180–198

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DOI: 10.1177/1088868310377395

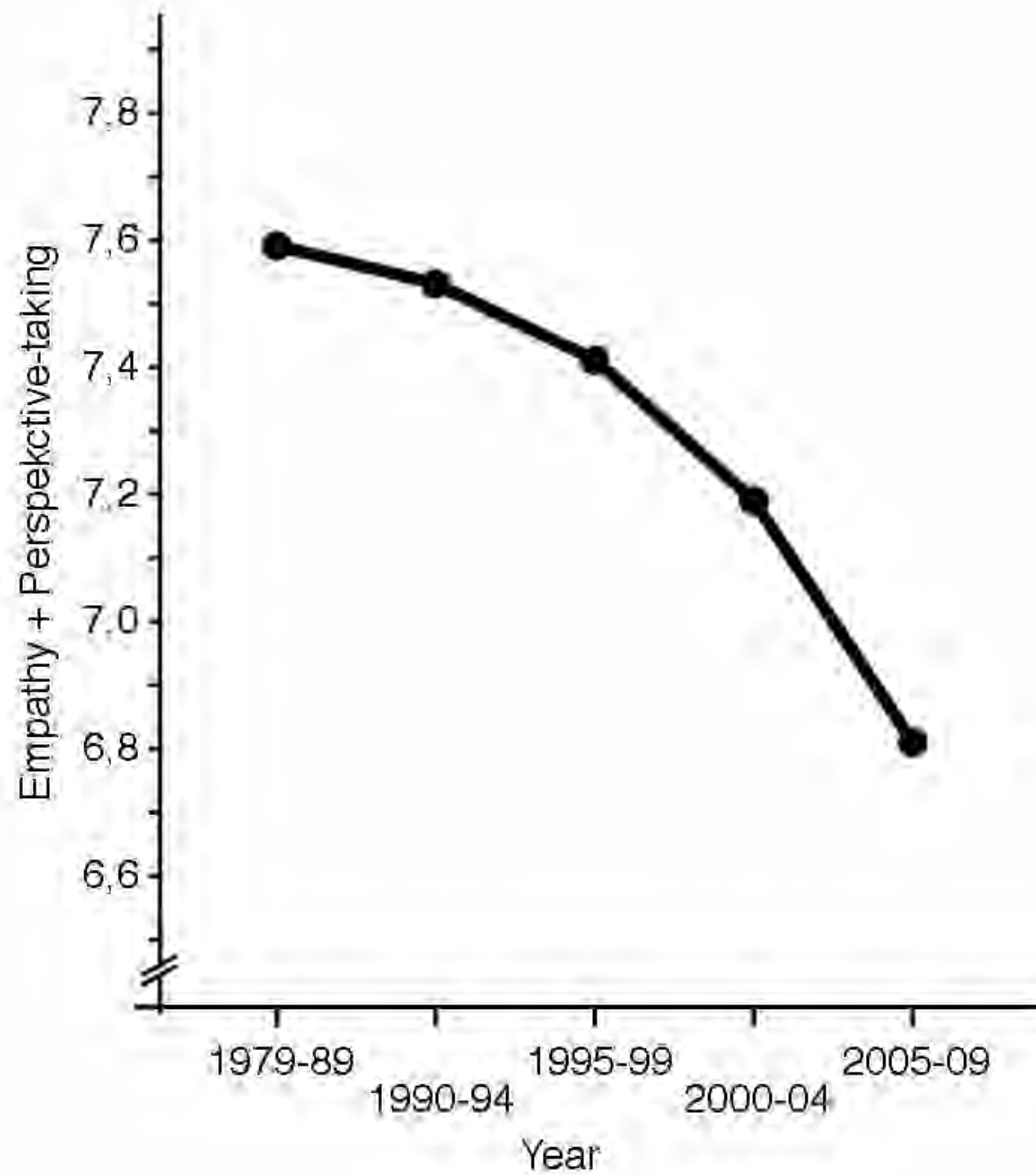
<http://pspr.sagepub.com>



Sara H. Konrath^{1,2}, Edward H. O'Brien¹, and Courtney Hsing¹

Abstract

The current study examines changes over time in a commonly used measure of dispositional empathy. A cross-temporal meta-analysis was conducted on 72 samples of American college students who completed at least one of the four subscales (Empathic Concern, Perspective Taking, Fantasy, and Personal Distress) of the Interpersonal Reactivity Index (IRI) between 1979 and 2009 (total $N = 13,737$). Overall, the authors found changes in the most prototypically empathic subscales of the IRI: Empathic Concern was most sharply dropping, followed by Perspective Taking. The IRI Fantasy and Personal Distress subscales exhibited no changes over time. Additional analyses found that the declines in Perspective Taking and Empathic Concern are relatively recent phenomena and are most pronounced in samples from after 2000.



ER LAG 20 MINUTEN BEWUSSTLOS VOR BANKAUTOMAT

Keiner half – jetzt ist dieser Rentner (82) tot!



Hier liegt der Rentner am Boden – und niemand hilft



HANDY GEZÜCKT STATT ZU HELFEN

Sterbenden Biker gefilmt – Gaffer stellt sich

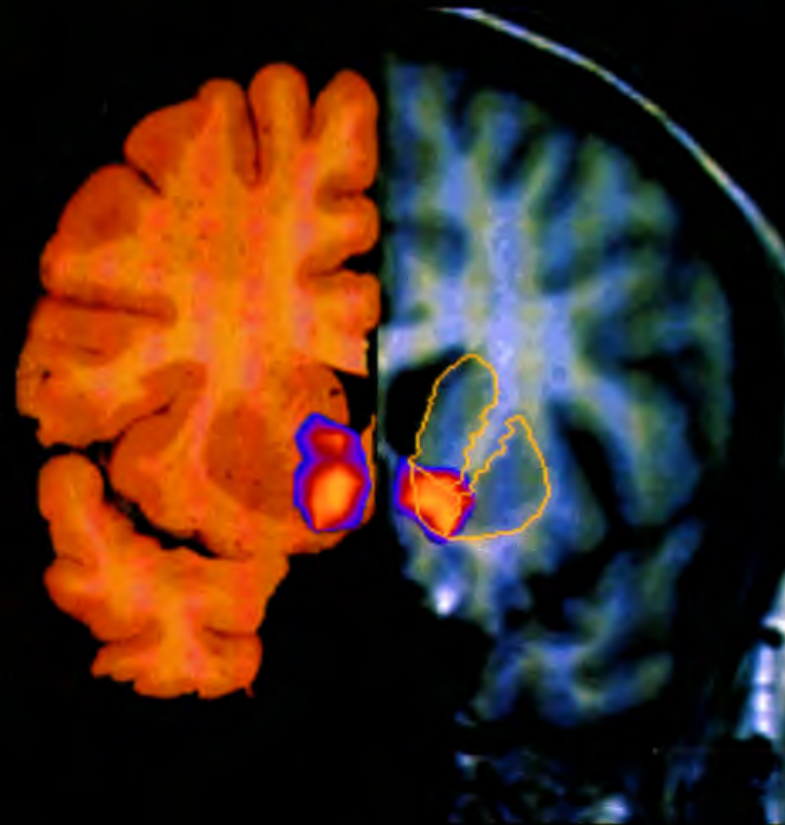
Risks and Side Effects (mind)

- **Addiction**
- Aggression
- Anxiety
- Depression
- decreased empathy
- decreased life satisfaction

Neuron

Volume 19 Number 3

September 1997



**Dynamic Mapping of Circuits Activated by Cocaine
in the Human Brain**

Psychological Reports: Disability & Trauma
2014, 115, 3, 675-695. © Psychological Reports 2014

EXAMINATION OF NEURAL SYSTEMS SUB-SERVING FACEBOOK ADDICTION

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Brain and Creativity Institute, University of Southern California

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Faculty of Psychology, Southwest University
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GUI XUE

National Key Laboratory of Cognitive
Neuroscience and Learning, Beijing Normal
University, China

Brain and Creativity Institute, University of Southern California

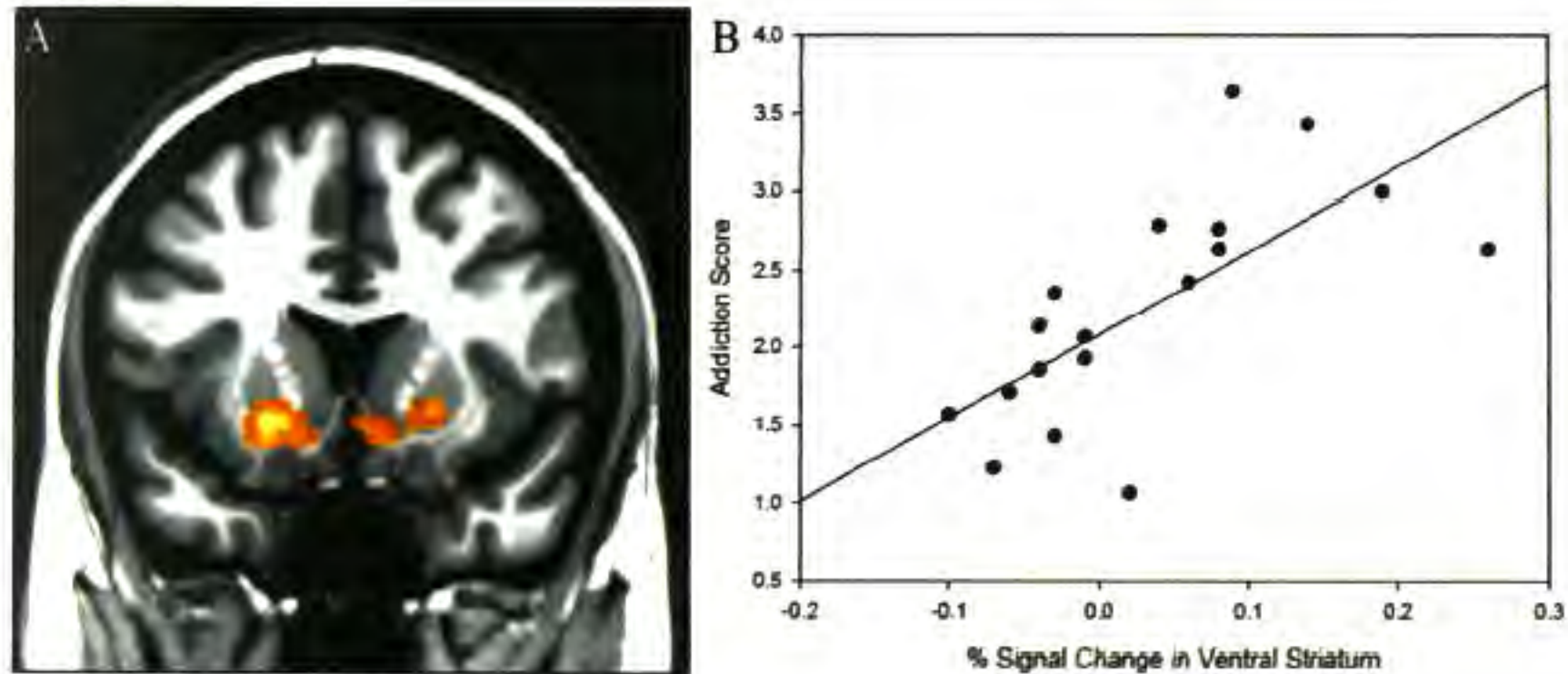
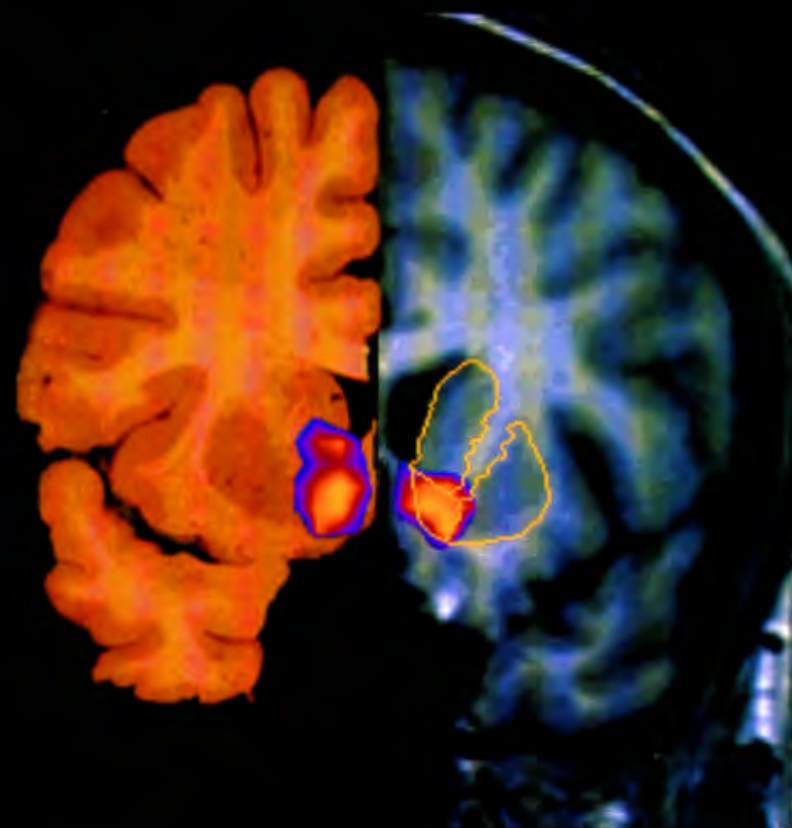
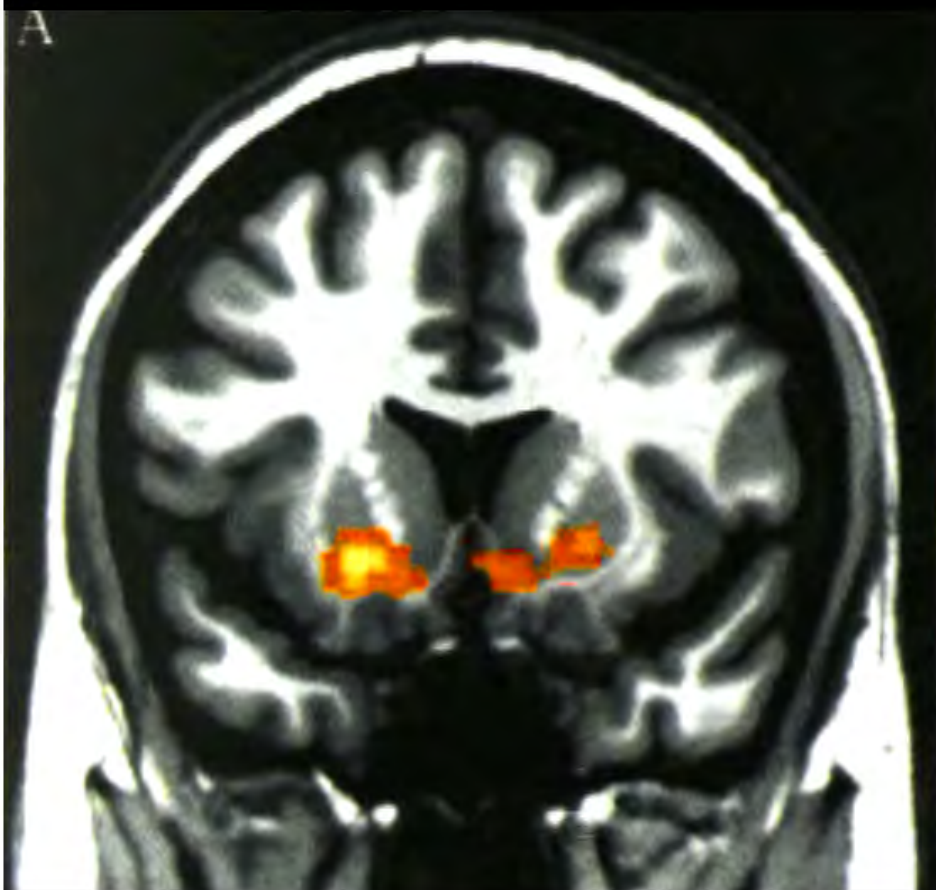


FIG. 3. The ventral striatum signal showed positive correlation with the addiction score in Facebook go trials. (A) Coronal image shows the ventral striatum signal. (B) Scatter plot shows the correlation pattern.



Risks and Side Effects: Education

- Decreased attention
- Decreased learning
- Decreased knowledge
- More dementia

Association between mobile phone use and inattention in 7102 Chinese adolescents: a population-based cross-sectional study

Feizhou Zheng¹, Peng Gao¹, Mindi He¹, Min Li¹, Changxi Wang², Qichang Zeng³, Zhou Zhou¹, Zhengping Yu¹ and Lei Zhang^{1*}

Zheng *et al. BMC Public Health* 2014, **14**:1022
<http://www.biomedcentral.com/1471-2458/14/1022>



Abstract

Background: The dramatic growth of mobile phone (MP) use among young people has increased interest in its possible health hazards in this age group. The aim of this cross-sectional study was to investigate the association between MP use and inattention in adolescents.

Results: In total, 7102 (91.99%) valid questionnaires were obtained. After adjusted for confounders, inattention in adolescents was significantly associated with MP ownership, the time spent on entertainment on MP per day, the position of the MP during the day and the mode of the MP at night. The strongest association between inattention and the time spent on the MP was among students who spent more than 60 minutes per day playing on their MP.



Contents lists available at [ScienceDirect](#)

Teaching and Teacher Education

journal homepage: www.elsevier.com/locate/tate

The myths of the digital native and the multitasker

Paul A. Kirschner ^{a, b, *}, Pedro De Bruyckere ^c

^a *Open University of the Netherlands, The Netherlands*

^b *Oulu University, Finland*

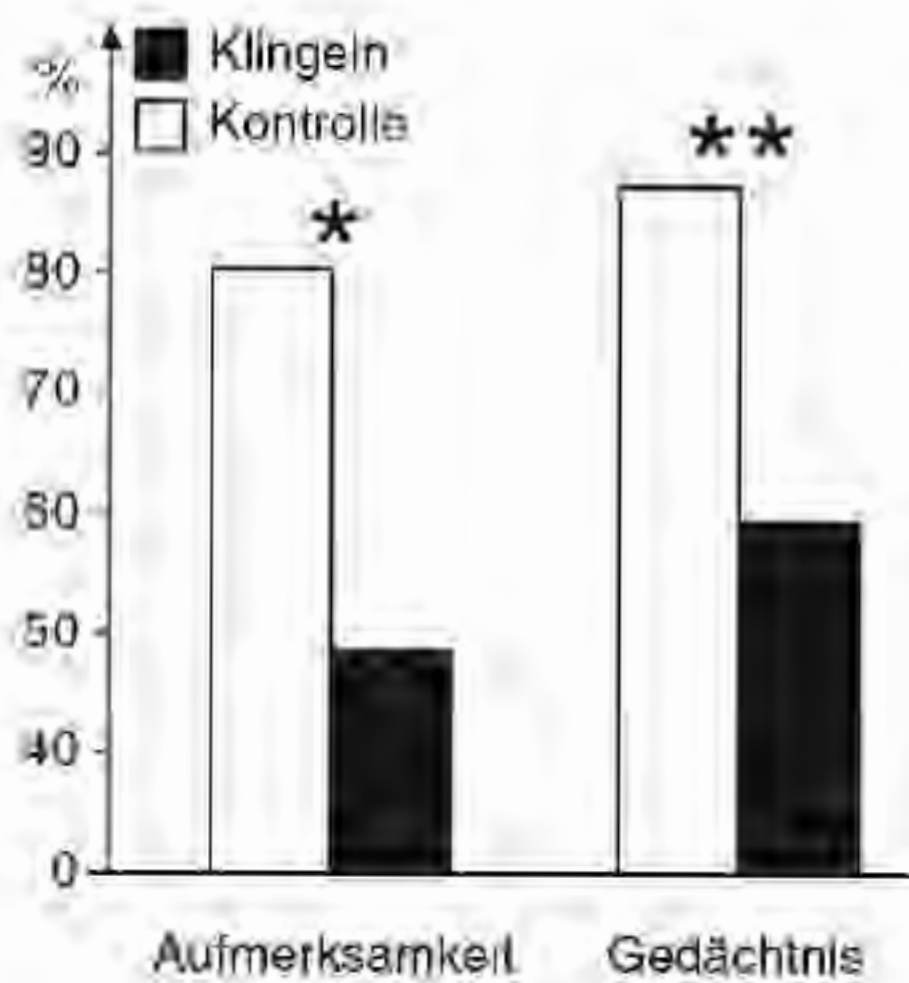
^c *Artevelde University College Ghent, Belgium*

Teaching of Psychology, 37: 55–57, 2010
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ISSN: 0098-6283 print / 1532-8023 online
DOI: 10.1080/00986280903425912



Costly Cell Phones: The Impact of Cell Phone Rings on Academic Performance

Christian M. End, Shaye Worthman, Mary Bridget Mathews,
and Katharina Wetterau
Xavier University



Journal of the Association for Consumer Research (JACR) 2017

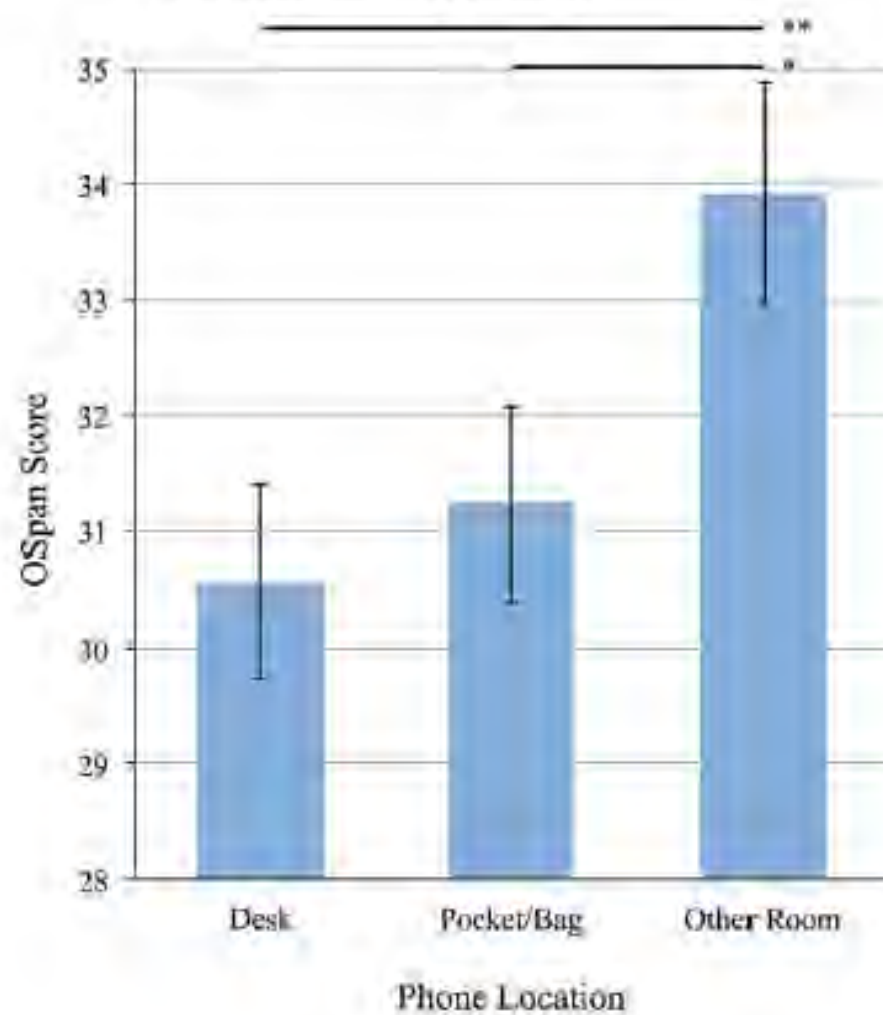
THE CONSUMER IN A CONNECTED WORLD

Brain Drain: The Mere Presence of One's Own Smartphone Reduces Available Cognitive Capacity

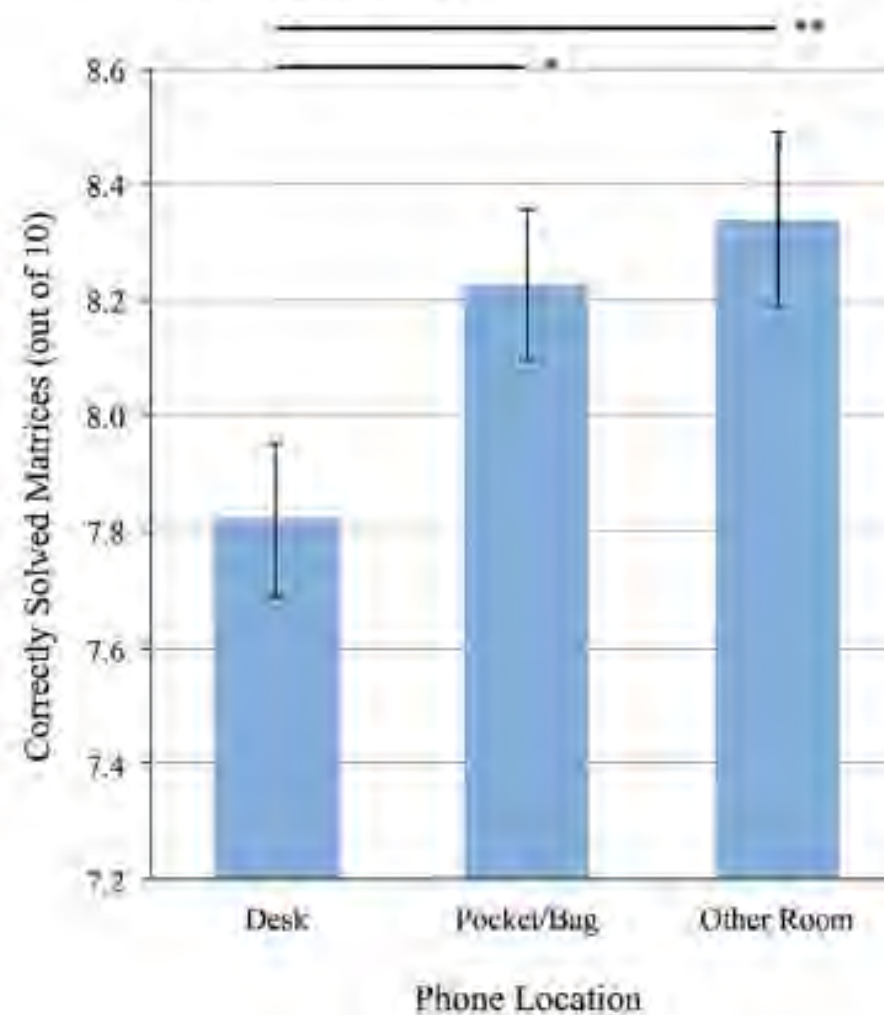
ADRIAN F. WARD, KRISTEN DUKE, AYELET GNEEZY, AND MAARTEN W. BOS

ABSTRACT Our smartphones enable—and encourage—constant connection to information, entertainment, and each other. They put the world at our fingertips, and rarely leave our sides. Although these devices have immense potential to improve welfare, their persistent presence may come at a cognitive cost. In this research, we test the “brain drain” hypothesis that the mere presence of one’s own smartphone may occupy limited-capacity cognitive resources, thereby leaving fewer resources available for other tasks and undercutting cognitive performance. Results from two experiments indicate that even when people are successful at maintaining sustained attention—as when avoiding the temptation to check their phones—the mere presence of these devices reduces available cognitive capacity. Moreover, these cognitive costs are highest for those highest in smartphone dependence. We conclude by discussing the practical implications of this smartphone-induced brain drain for consumer decision-making and consumer welfare.

A. Working Memory Capacity



B. Fluid Intelligence



- Decreased attention
- Decreased learning
- Decreased knowledge
- More dementia



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Computers in Human Behavior

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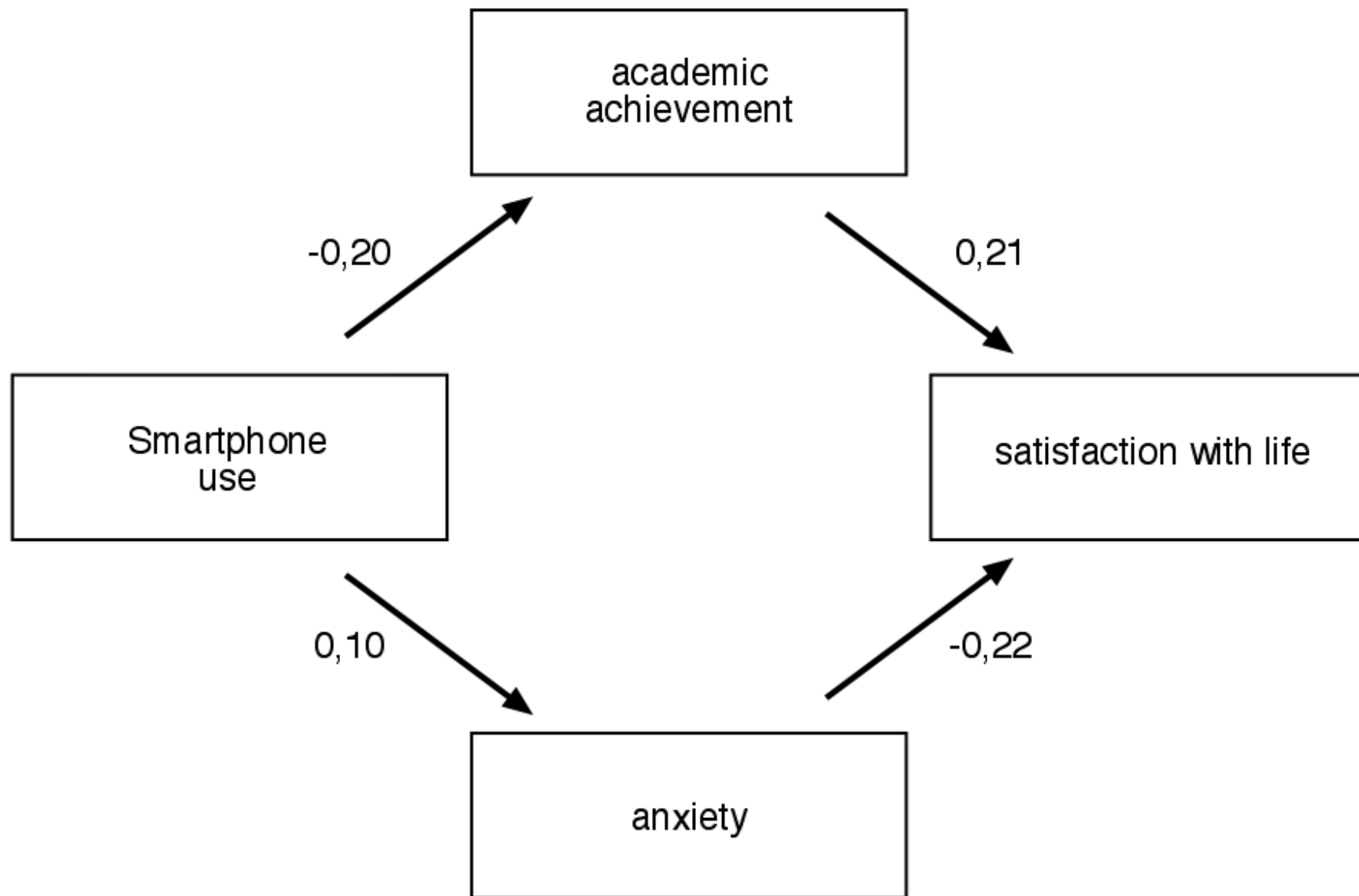


The relationship between cell phone use, academic performance, anxiety, and Satisfaction with Life in college students

Andrew Lepp^{*}, Jacob E. Barkley, Aryn C. Karpinski

Kent State University, College of Education, Health and Human Services, Kent, OH 44242-000, USA





Associations between 24 hour movement behaviours and global cognition in US children: a cross-sectional observational study



Jeremy J Walsh, Joel D Barnes, Jameason D Cameron, Gary S Goldfield, Jean-Philippe Chaput, Katie E Gunnell, Andrée-Anne Ledoux, Roger L Zemek, Mark S Tremblay

Summary

Background Childhood and adolescence are crucial periods for brain development, and the behaviours during a typical 24 h period contribute to cognitive performance. The Canadian 24-Hour Movement Guidelines for Children and Youth recommend at least 60 min physical activity per day, 2 h or less recreational screen time per day, and 9–11 h sleep per night in children aged 8–11 years. We investigated the relationship between adherence to these recommendations and global cognition.

Methods In this cross-sectional observational study, we obtained data from the first annual curated release of the Adolescent Brain Cognitive Development study, a 10-year longitudinal, observational study. Data were collected from 21 study sites across the USA between Sept 1, 2016, and Sept 15, 2017. The participants were 4524 US children aged 8–11 years from 20 study sites. Exposures of interest were adherence to the physical activity, recreational screen time, and sleep duration guideline recommendations. The primary outcome was global cognition, assessed with the NIH Toolbox (National Institutes of Health, Bethesda, MD, USA), which we analysed with multivariable linear mixed-effects models to examine the relations with movement behaviour variables.

Findings Complete movement behaviour data were available for 4520 participants. The mean number of guideline recommendations met was 1.1 (SD 0.9). Overall, 2303 (51%) participants met the sleep recommendation, 1655 (37%) met screen time, and 793 (18%) met the physical activity recommendation. 3190 (71%) participants met at least one recommendation, whereas 216 (5%) of participants met all three recommendations. Global cognition was positively associated with each additional recommendation met ($\beta=1.44$, 95% CI 0.82–2.07, $p<0.0001$). Compared with meeting none of the recommendations, associations with superior global cognition were found in participants who met all three recommendations ($\beta=3.89$, 95% CI 1.43 to 6.34, $p=0.0019$), the screen time recommendation only ($\beta=4.25$, 2.50–6.01, $p<0.0001$), and both the screen time and the sleep recommendations ($\beta=5.15$, 3.56–6.74, $p<0.0001$).

Interpretation Meeting the 24 h movement recommendations was associated with superior global cognition. These findings highlight the importance of limiting recreational screen time and encouraging healthy sleep to improve cognition in children.

Lancet Child Adolesc Health 2018

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September 26, 2018

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[S2352-4642\(18\)30278-5](http://dx.doi.org/10.1016/S2352-4642(18)30278-5)

See Online/Comment

[http://dx.doi.org/10.1016/](http://dx.doi.org/10.1016/S2352-4642(18)30305-5)

[S2352-4642\(18\)30305-5](http://dx.doi.org/10.1016/S2352-4642(18)30305-5)

Healthy Active Living and Obesity Research Group, Children's Hospital of Eastern Ontario Research Institute, Ottawa, ON, Canada

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G S Goldfield PhD,

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(G S Goldfield, J-P Chaput,

R L Zemek MD,

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University of Ottawa, Ottawa,

ON, Canada; Department of

Psychology, Carleton

University, Ottawa, ON,

Canada (K E Gunnell PhD); and

Emergency Department

Research, Children's Hospital of

4524 children(8-11 yrs)
from 21 sites of the USA
September 2016 toSeptember 2017
under study:
sleep, sports, screen media
Effects on cognitive development of children
Results: Screen media have the biggest effect
-- and it is negative

Google Effects on Memory: Cognitive Consequences of Having Information at Our Fingertips

Betsy Sparrow,^{1*} Jenny Liu,² Daniel M. Wegner³

¹Department of Psychology, Columbia University, 1190 Amsterdam Avenue, New York, NY 10027, USA. ²Department of Psychology, University of Wisconsin–Madison, 1202 West Johnson Street, Madison, WI 53706, USA. ³Department of Psychology, Harvard University, 33 Kirkland Street, Cambridge, MA 02138, USA.

COMMENTARY

Ambient intelligence

1581



LETTERS

DAVID B. DANIEL^{1*} AND DANIEL T. WILLINGHAM²

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SCIENCE VOL 335 30 MARCH 2012

Electronic Textbooks: Why the Rush?

THE RACE TO REPLACE TRADITIONAL TEXTBOOKS WITH ELECTRONIC VERSIONS IS ON. ALTHOUGH electronic textbooks have been most carefully tested in university students, the Obama Administration is advocating their use in elementary and secondary schools. In February,

The Pen Is Mightier Than the Keyboard: Advantages of Longhand Over Laptop Note Taking



Pam A. Mueller¹ and Daniel M. Oppenheimer²

¹Princeton University and ²University of California, Los Angeles

Psychological Science

1–10

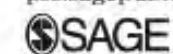
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DOI: 10.1177/0956797614524581

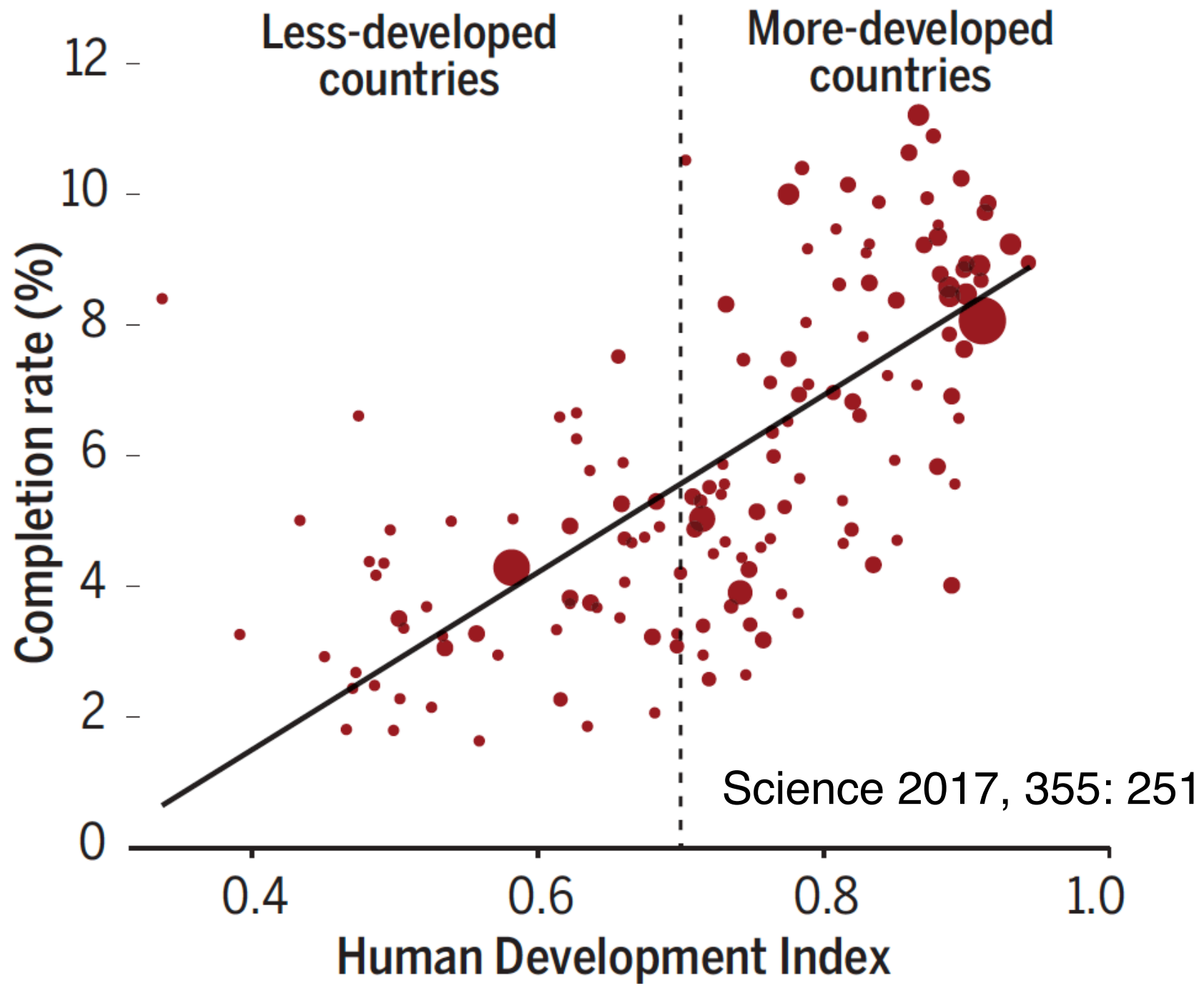
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Brains don't do downloads!

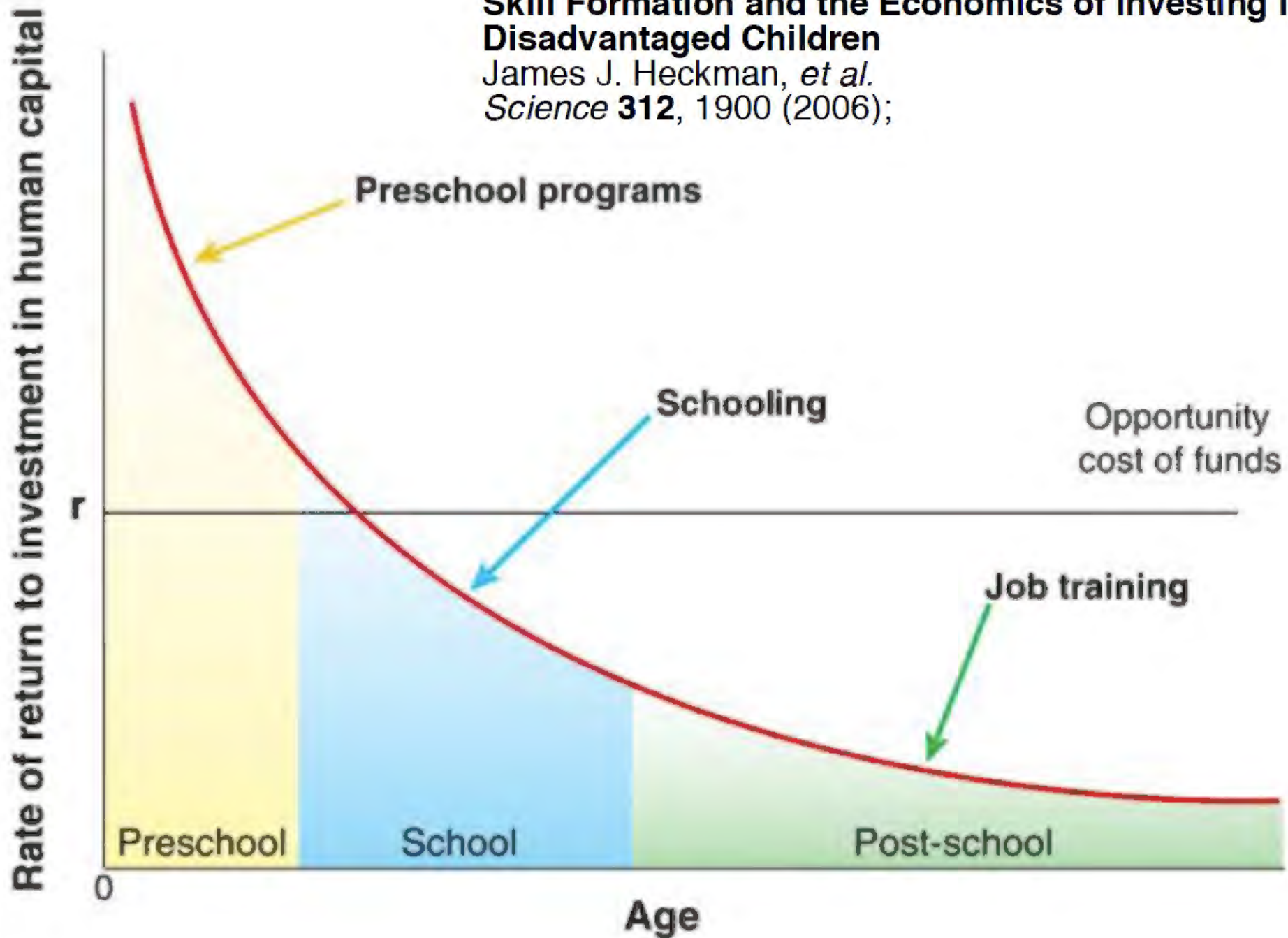
- Decreased attention
- Decreased learning
- Decreased knowledge
- More dementia

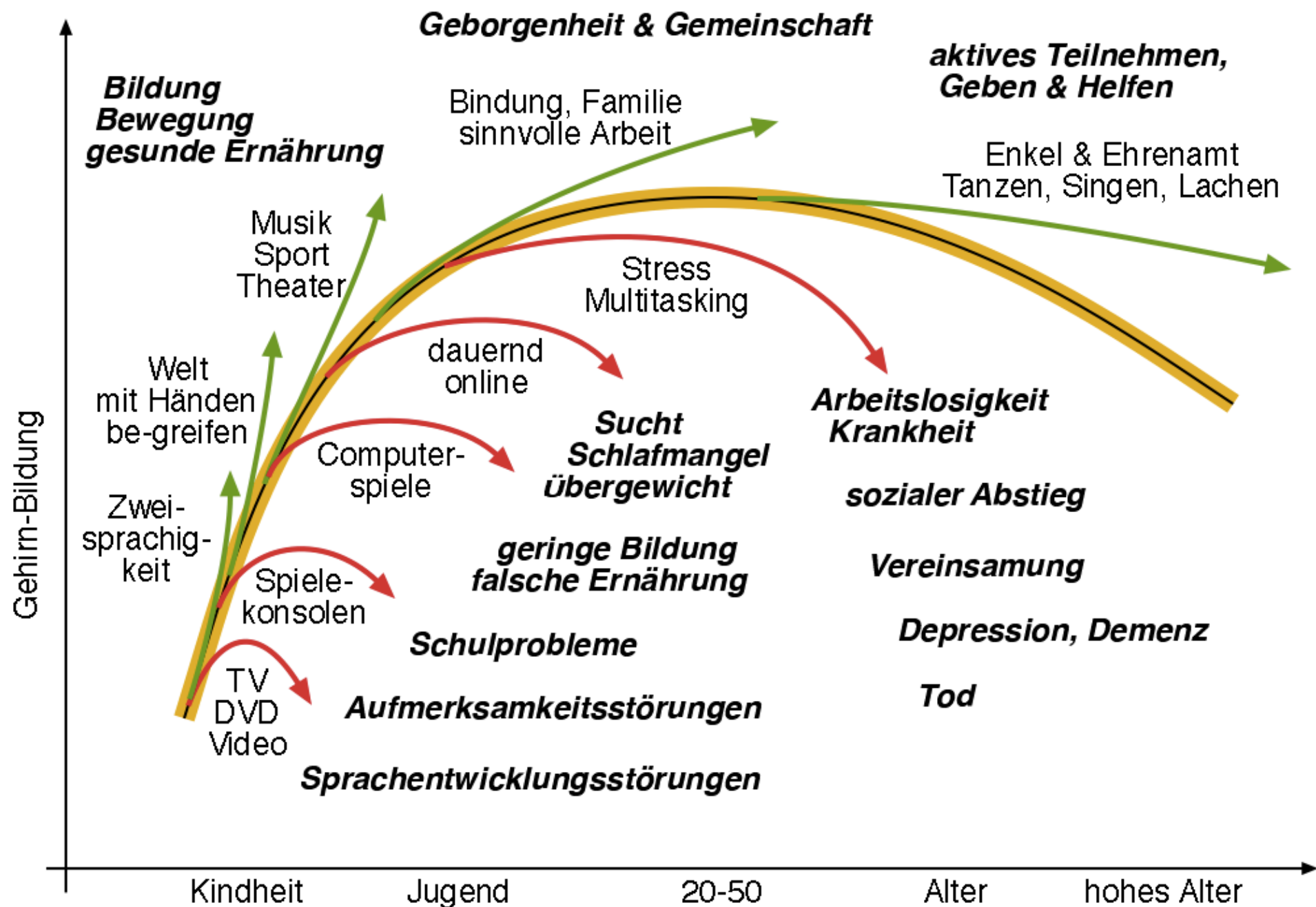
Morbus Google



Skill Formation and the Economics of Investing in Disadvantaged Children

James J. Heckman, *et al.*
Science **312**, 1900 (2006);






- Decreased attention
- Decreased learning
- Decreased knowledge
- More dementia

Students are Better Off without a Laptop in the Classroom

What do you think they'll actually use it for?

By Cindi May on July 11, 2017

Logged In and Zoned Out: How Laptop Internet Use Relates to Classroom Learning

Psychological Science
2017, Vol. 28(2) 171–180
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DOI: 10.1177/0956797616677314
www.psychologicalscience.org/PS


**Susan M. Ravizza, Mitchell G. Uitvlugt, and
Kimberly M. Fenn**

Department of Psychology, Michigan State University, East Lansing

Abstract

Laptop computers are widely prevalent in university classrooms. Although laptops are a valuable tool, they offer access to a distracting temptation: the Internet. In the study reported here, we assessed the relationship between classroom performance and actual Internet usage for academic and nonacademic purposes. Students who were enrolled in an introductory psychology course logged into a proxy server that monitored their online activity during class. Past research relied on self-report, but the current methodology objectively measured time, frequency, and browsing history of participants' Internet usage. In addition, we assessed whether intelligence, motivation, and interest in course material could account for the relationship between Internet use and performance. Our results showed that nonacademic Internet use was common among students who brought laptops to class and was inversely related to class performance. This relationship was upheld after we accounted for motivation, interest, and intelligence. Class-related Internet use was not associated with a benefit to classroom performance.

No correlation between academic use of computers and exam score

34% of course time spent with nonacademic use

Table 3. Correlations Between Cumulative Final-Exam Score and Actual Nonacademic Internet Use for the Seven Site Categories

Nonacademic Internet use	Final-exam score
Using social media	-.23*
Shopping	-.19 [†]
Reading e-mail	-.13
Chatting	-.01
Reading news and sports	-.10
Watching videos	-.27*
Playing games	-.14

[†] $p < .10$. * $p < .05$.



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Economics of Education Review

journal homepage: www.elsevier.com/locate/econedurev

The impact of computer usage on academic performance: Evidence from a randomized trial at the United States Military Academy[☆]

Susan Payne Carter, Kyle Greenberg*, Michael S. Walker

United States Military Academy, 607 Cullum Road, West Point, NY 10996, USA

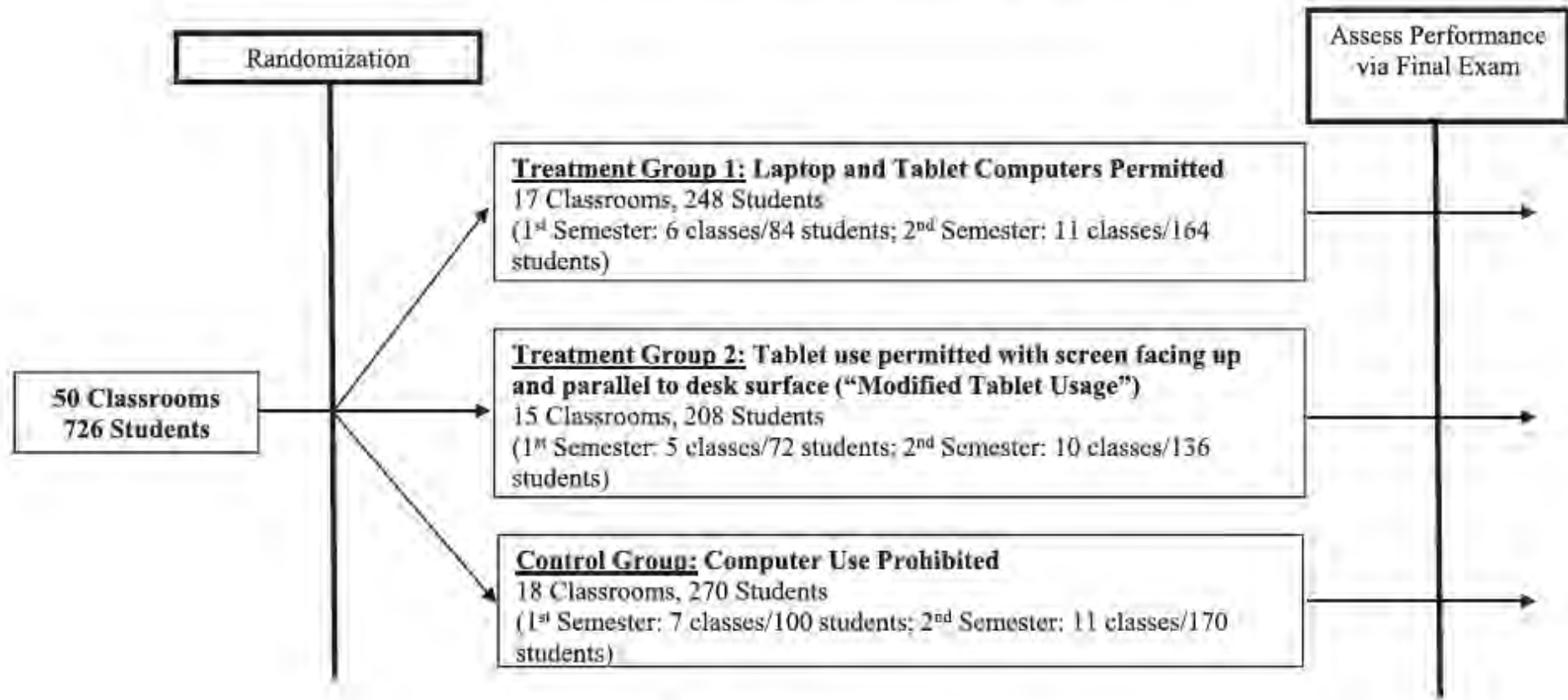


Fig. 1. Experimental design.

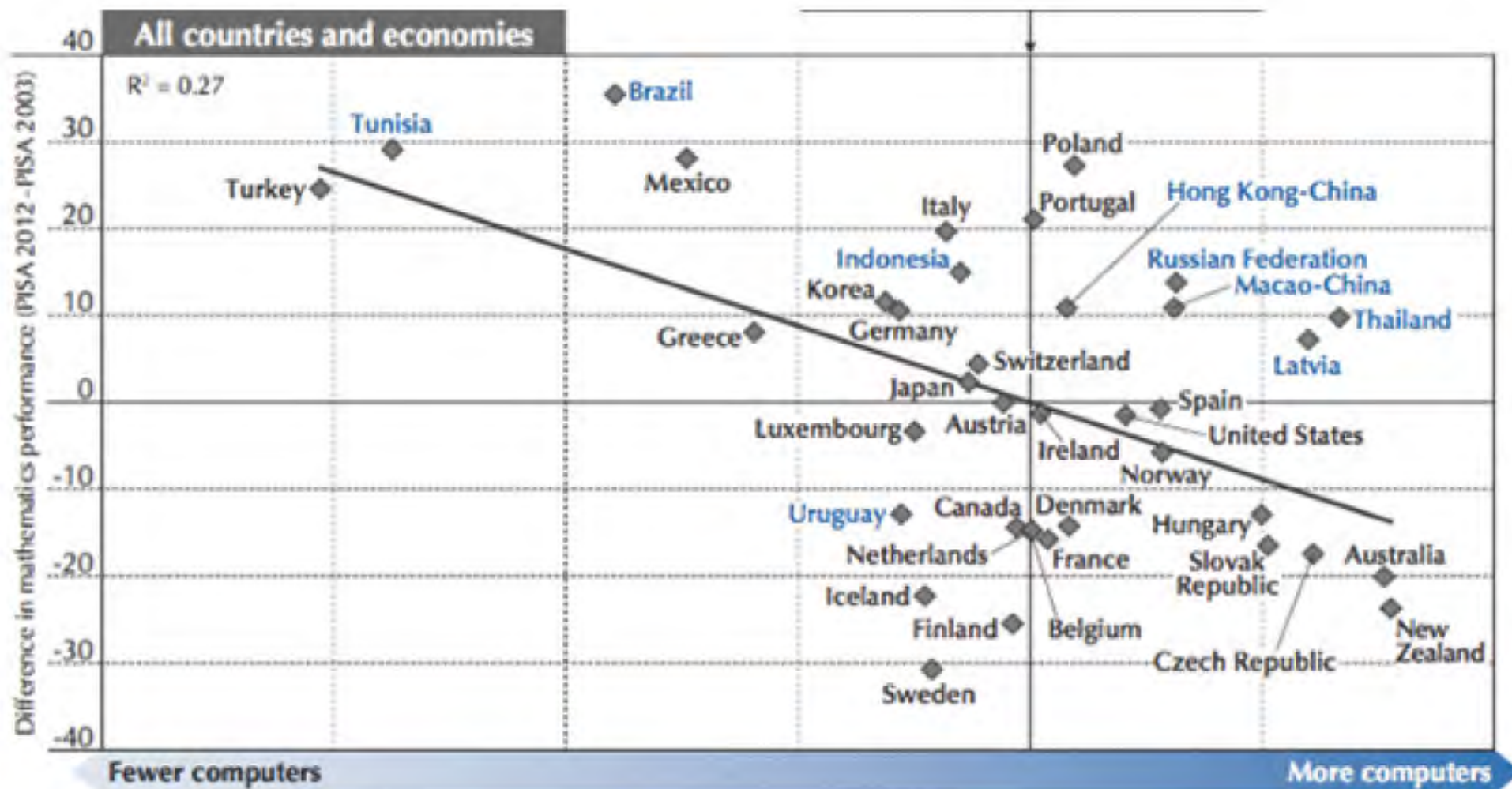


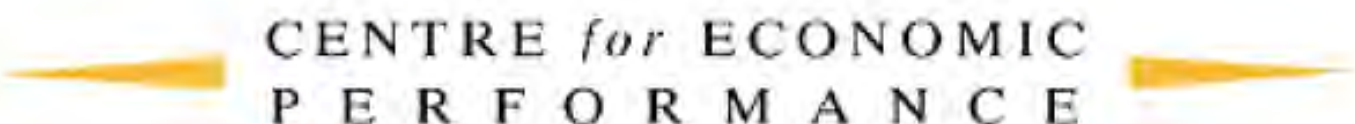
Students, Computers and Learning

MAKING THE CONNECTION

September 2015





The logo for the Centre for Economic Performance features the text "CENTRE *for* ECONOMIC PERFORMANCE" in a serif font. The word "for" is in italics. The text is centered and flanked by two stylized, horizontal, yellow-to-orange gradient shapes that taper to points, resembling wings or abstract arrows.

CENTRE *for* ECONOMIC
P E R F O R M A N C E

CEP Discussion Paper No 1350

May 2015

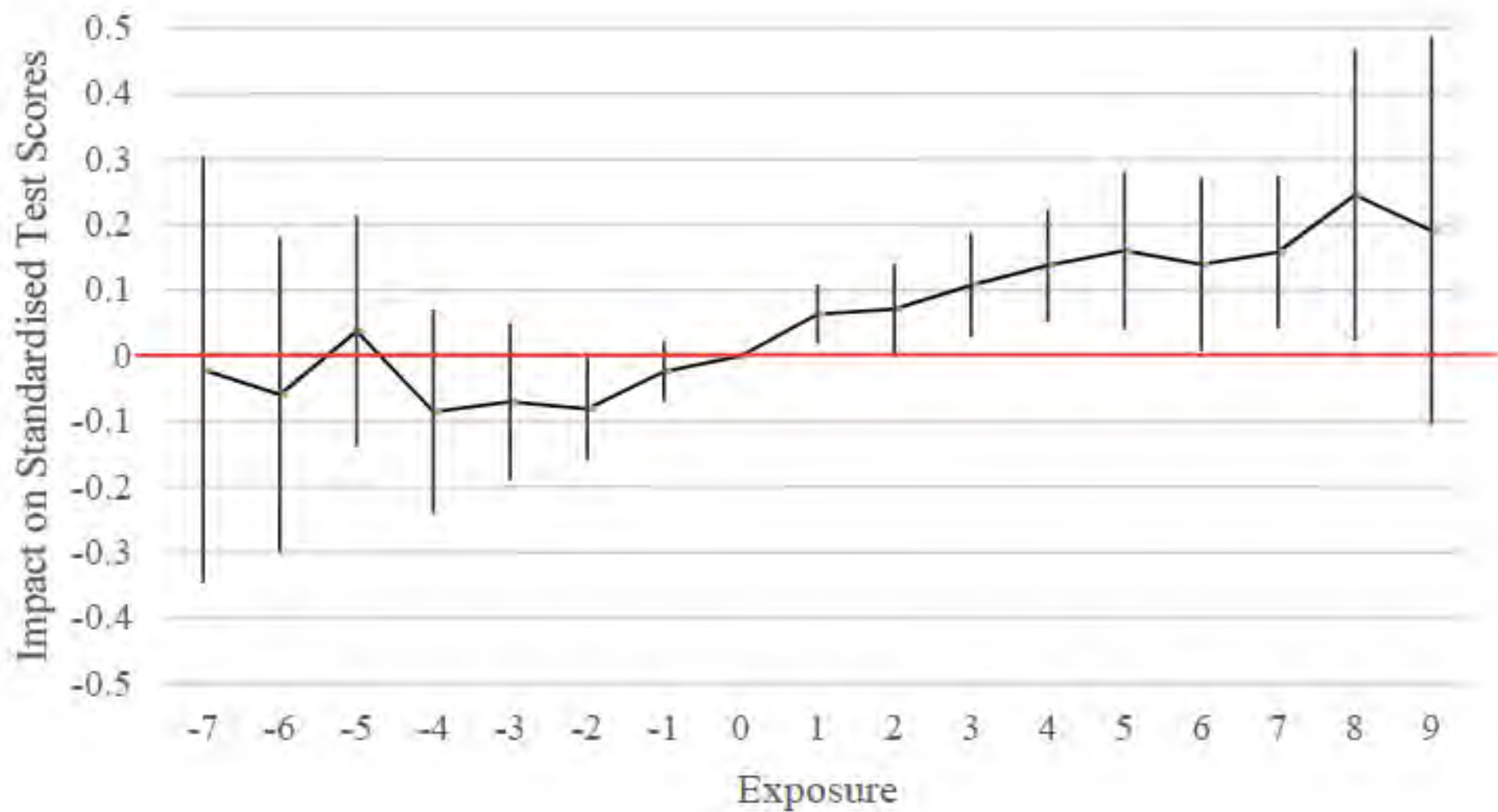
**III Communication: Technology, Distraction & Student
Performance**

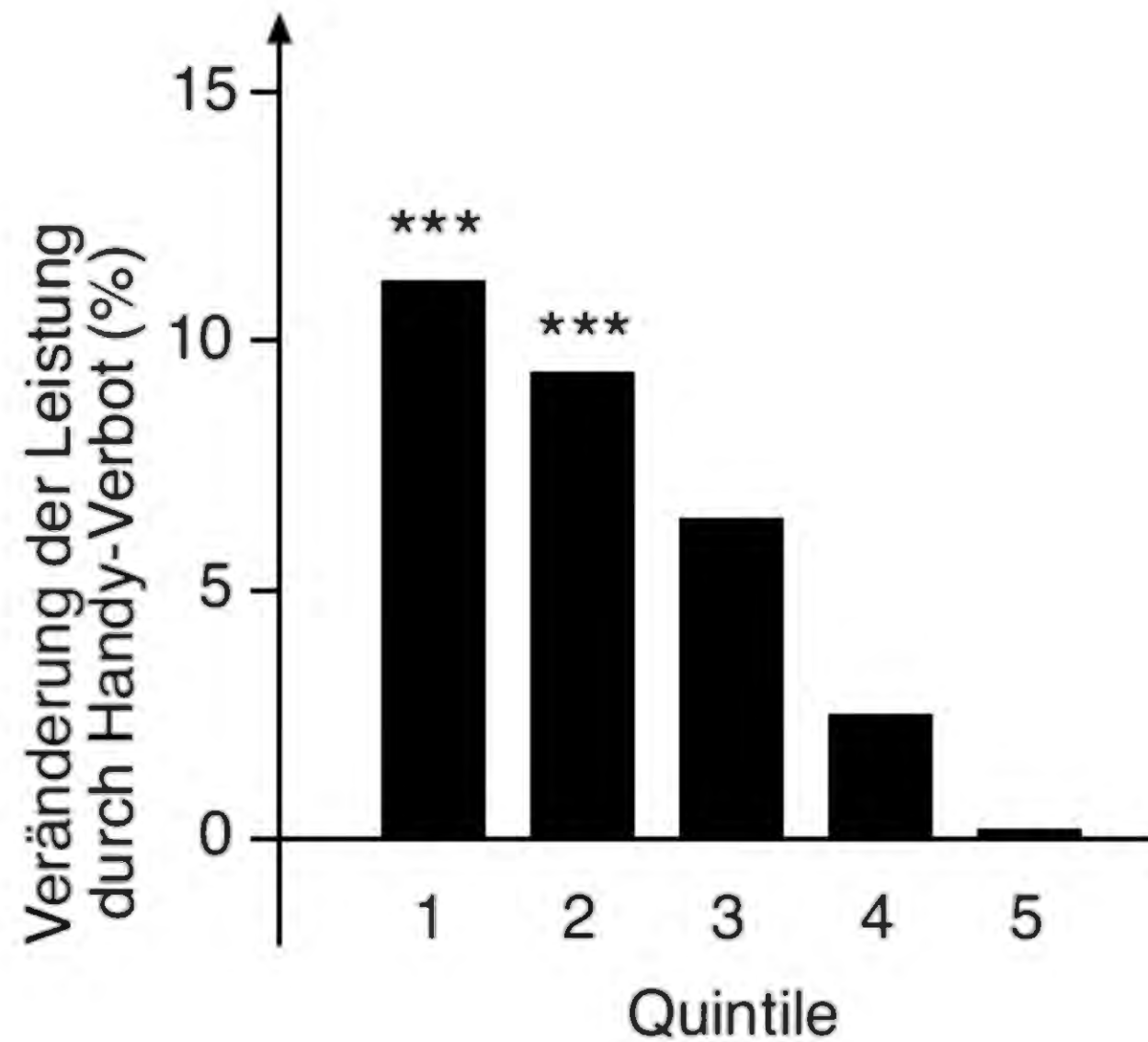
**Louis-Philippe Beland
Richard Murphy**

Table 2: Descriptive Statistics on Mobile Phone Policies

Year	Mobile Bans	High-compliance Bans	Low-compliance Bans
2000	0	0	0
2001	0	0	0
2002	3	2	1
2003	6	5	1
2004	9	7	2
2005	19	13	6
2006	29	20	9
2007	43	31	12
2008	58	38	20
2009	71	47	24
2010	85	54	31
2011	88	55	33
2012	90	56	34

Figure 2: Impact of Phone Ban by Years of Exposure





Lernen in Notebook-Klassen.
Endbericht zur Evaluation des Projekts
„1000mal1000: Notebooks im Schulranzen“

Gefördert von



Bundesministerium
für Bildung
und Forschung

Deutsche
Telekom



EUROPÄISCHE UNION
Europäischer Sozialfonds

Analysen und
Ergebnisse

Heike Schaumburg
Doreen Prasse
Karin Tschackert
Sigrid Blömeke



Eine Initiative des Bundesministeriums für
Bildung und Forschung
und der Deutschen Telekom AG

4.4.4. Zusammenfassung

Die Auswertung der Ergebnisse zu Lernverhalten, Fachleistungen und fachübergreifenden Kompetenzen zeigt, dass Schülerinnen und Schüler in Notebook-Klassen zumindest die gleichen und in einigen Teilbereichen auch etwas höhere Werte erreichen als Schülerinnen und Schüler herkömmlich unterrichteter Klassen. Viele der berichteten Unterschiede sind dabei zwar statistisch signifikant, d. h. sie liegen außerhalb des Bereichs der zufälligen Schwankungen. Ihre praktische Bedeutung ist dennoch häufig gering, d. h. die Unterschiede zwischen Notebook-Schülern und Nicht-Notebook-Schülern sind minimal. Insgesamt kann die Studie somit keinen eindeutigen Beleg dafür liefern, dass die Arbeit mit Notebooks sich grundsätzlich in verbesserten Leistungen und Kompetenzen sowie förderlichem Lernverhalten von Schülern niederschlägt.

Lernverhalten

- Notebook-Schüler zeigen in der Tendenz eine positivere Einstellung zu Schule und Unterricht als Nicht-Notebook-Schüler. Schüler aller Schulformen geben an, in Notebook-Klassen mehr Spaß am Deutschunterricht und eine positivere schulbezogene Selbstwirksamkeitserwartung zu haben, d. h. die Einstellung, dass Anstrengung in der Schule mit besseren Leistungen belohnt wird. Die Mehrheit der Lehrerinnen und Lehrer bestätigt im Interview eine insgesamt höhere Motivation der Notebook-Schüler.
- Übereinstimmend deuten die Ergebnisse aus Lehrer-Interviews und Lehrer-Fragebogen sowie der Unterrichtsbeobachtung darauf hin, dass die Schüler im Unterricht mit Notebooks tendenziell unaufmerksamer sind. Ursächlich hierfür dürften die beschriebenen Ablenkungsmöglichkeiten sein, die beim Einsatz der Geräte entstehen. Von einem Teil

- Im Bereich Informationskompetenz wurde ein geringer positiver Effekt hinsichtlich der subjektiv wahrgenommenen Informationskompetenz bei den Haupt- und Realschülern festgestellt. Im Informationskompetenz-Test wurden keine Unterschiede zwischen Notebook- und Nicht-Notebook-Schülern gefunden. Auch von den Lehrerinnen und Lehrern



Hamburger Netbook-Projekt **Sekundarstufen-Schulen**

Projektbericht
Dokumentation
Evaluation

Schuljahr 2009/10



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Michael Vallendor

Hamburg 2010

Im Unterschied zu früheren Notebook-Projekten kann heute davon ausgegangen werden, dass Schüler über umfassende Vorkenntnisse im Umgang mit Computer und Internet verfügen. Von den am Netbook-Projekt beteiligten Schülern besaßen 90% bereits bei Projektbeginn einen eigenen Computer zu Hause. Das Computer- und Internetwissen haben sich die Schüler hauptsächlich selbst beigebracht (58%) oder es wurde ihnen von Familienmitgliedern (28%) vermittelt. Die Schule spielt hier eine untergeordnete Rolle (8%).

Ein eindeutiger Trend zu einer Stärkung der Medienkompetenz im Umgang mit Computer und Internet konnte in Folge des Netbook-Einsatzes nicht verzeichnet werden. Dies dürfte sich zum einen durch die relativ umfangreichen Vorerfahrungen der Schüler erklären und zum anderen dadurch, dass die Nutzung des Netbooks als Arbeitsmittel im Vordergrund des Unterrichts stand und (in der Regel) nicht die Vermittlung von Wissen oder Fähigkeiten im Umgang mit Computer und Internet. Darüber hinaus lässt auch die kurze Laufzeit des Evaluationszeitraums und die hohe Heterogenität der Einzelvorhaben erwarten, dass zwischen den Schülern des Modellversuchs und anderen Schülern keine signifikanten Unterschiede in der Kompetenzentwicklung nachzuweisen sind, die sich eindeutig auf den Netbook-Einsatz zurückführen lassen.

Der Einsatz von Netbooks setzt eine ausreichende technische Infrastruktur und einen zuverlässigen technischen Support voraus. Ein kabelloser Zugang zum Internet wurde in vielen Schulen erst während des Schuljahres geschaffen. Der Versuch, die Netbooks in das schuleigene Netz und die Infrastruktur einzubinden, führte teilweise zu technischen Einschränkungen, welche in einigen Fällen die Vorhaben beeinträchtigt und zum Teil unterbunden haben. Die Mobilität der Netbooks konnte so nicht immer mit einem entsprechenden Internetzugang unterstützt werden. Nur von einer Minderheit wurde dieses Potenzial genutzt, um auch außerhalb der Klassenräume mit den Netbooks zu arbeiten. Lediglich ein Fünftel der Schüler bestätigte eine Nutzung außerhalb des Klassenzimmers oder des Schulgebäudes. Auch Eigenschaften der Netbooks wurden als für

The New York Times

October 22, 2011

A Silicon Valley School That Doesn't Compute

By **MATT RICHTEL**

LOS ALTOS, Calif. — The chief technology officer of eBay sends his children to a nine-classroom school here. So do employees of Silicon Valley giants like Google, Apple, Yahoo and Hewlett-Packard.

But the school's chief teaching tools are anything but high-tech: pens and paper, knitting needles and, occasionally, mud. Not a computer to be found. No screens at all. They are not allowed in the classroom, and the school even frowns on their use at home.

Steve Jobs Was a Low-Tech Parent

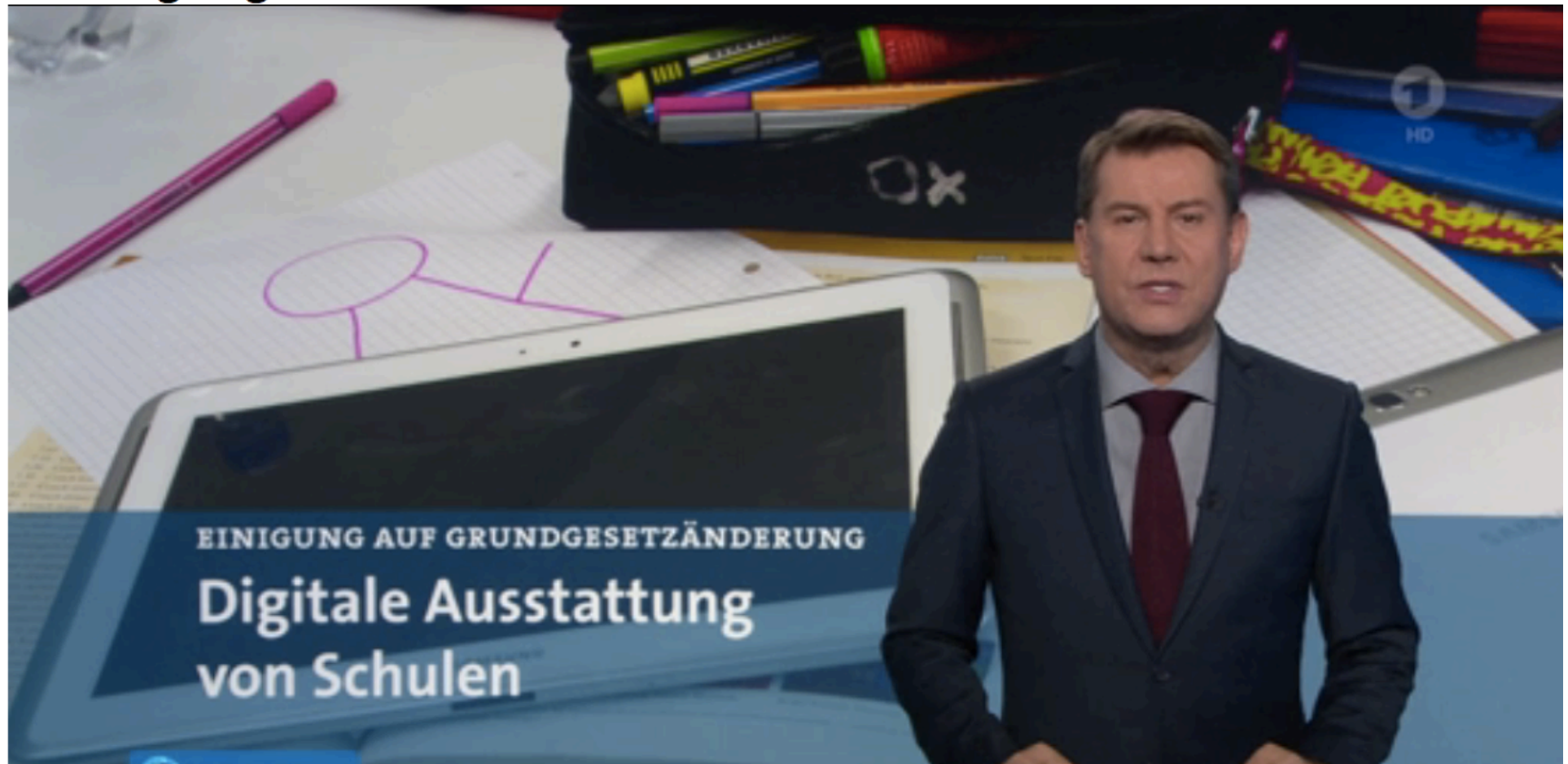
By NICK BILTON SEPT. 10, 2014

When Steve Jobs was running Apple, he was known to call journalists to either pat them on the back for a recent article or, more often than not, explain how they got it wrong. I was on the receiving end of a few of those calls. But nothing shocked me more than something Mr. Jobs said to me in late 2010 after he had finished chewing me out for something I had written about an iPad shortcoming.

“So, your kids must love the iPad?” I asked Mr. Jobs, trying to change the subject. The company’s first tablet was just hitting the shelves. “They haven’t used it,” he told me. “We limit how much technology our kids use at home.”

I’m sure I responded with a gasp and dumbfounded silence. I had imagined the Jobs’s household was like a nerd’s paradise.

Sendung: tagesschau 23.11.2018 20:00 Uhr



Grundgesetzänderung
5 Milliarden für Computer und Internet an Schulen

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www.spiegel.de

Januar 2015

Research Report



Effects of Video-Game Ownership on Young Boys' Academic and Behavioral Functioning: A Randomized, Controlled Study

Robert Weis and Brittany C. Cerankosky

Denison University

Psychological Science

XX(X) 1–8

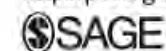
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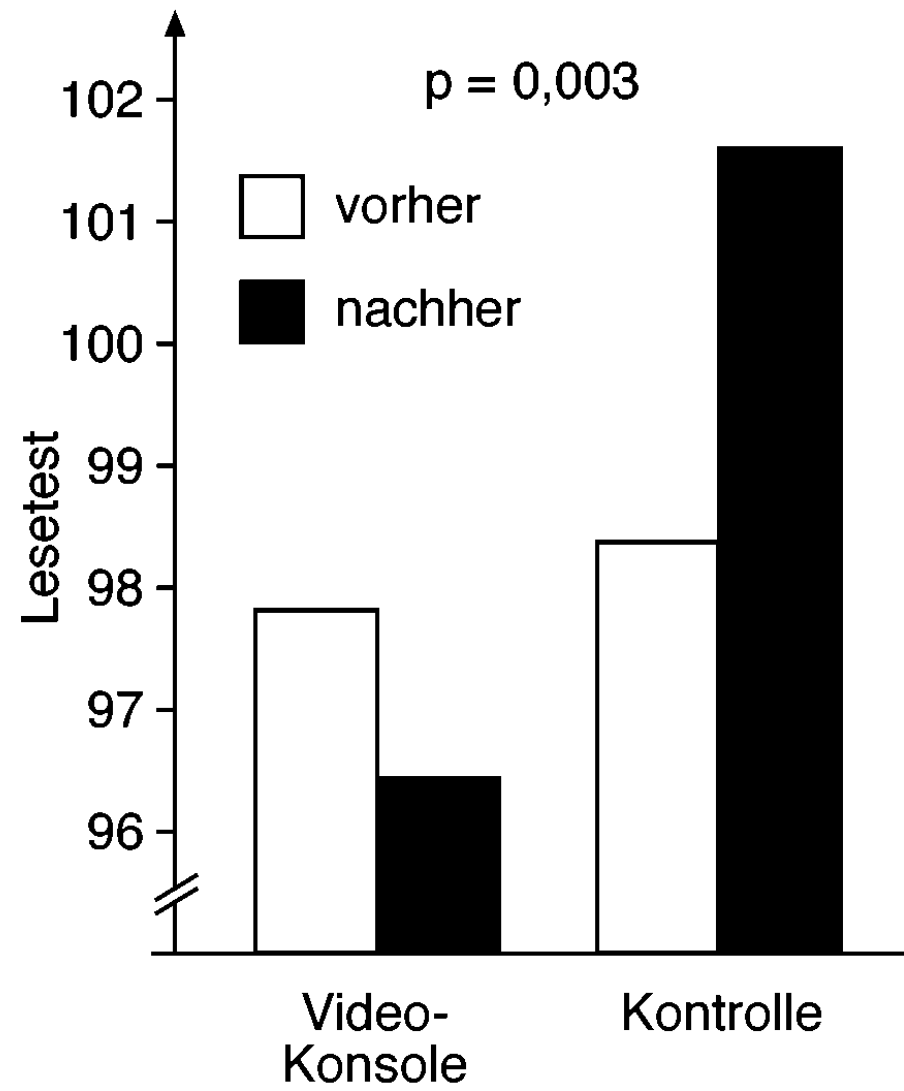
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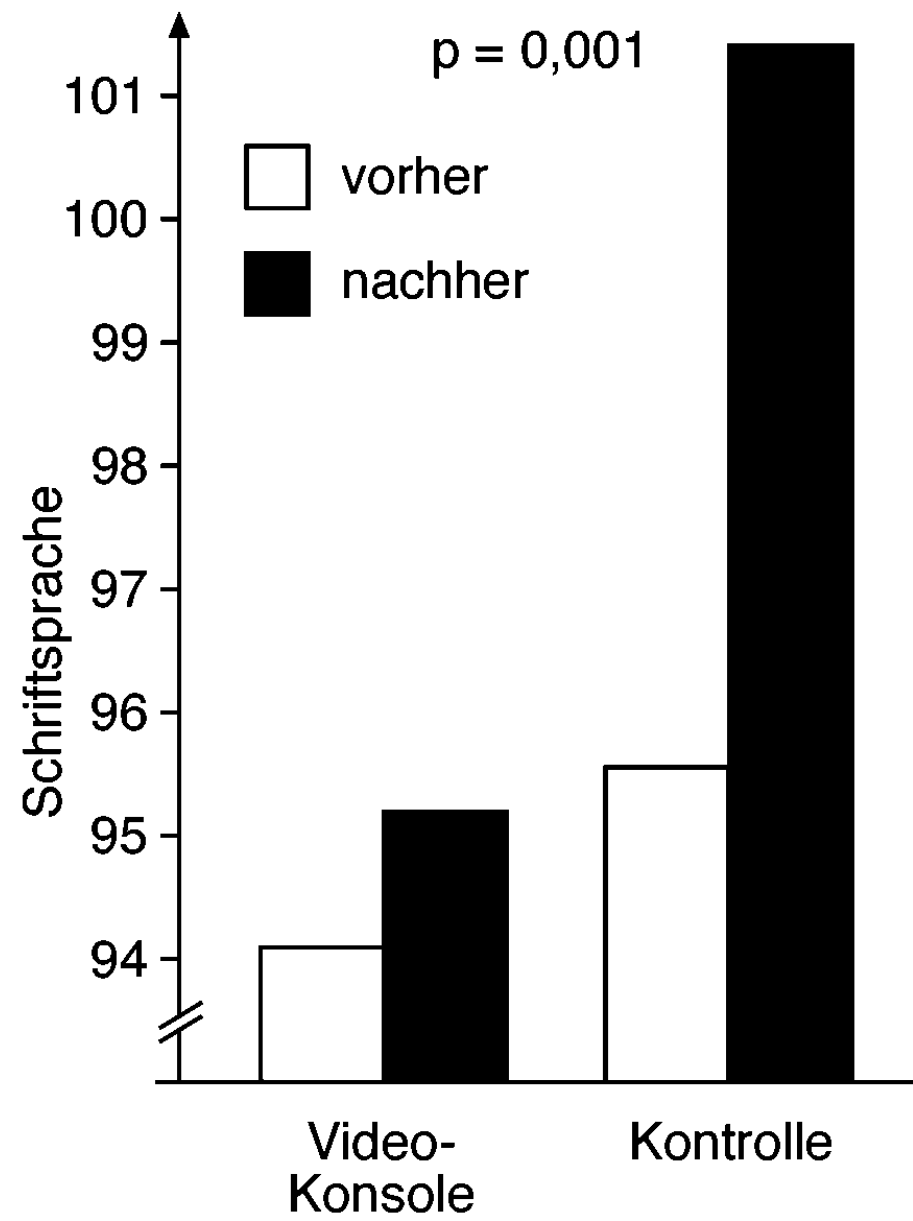
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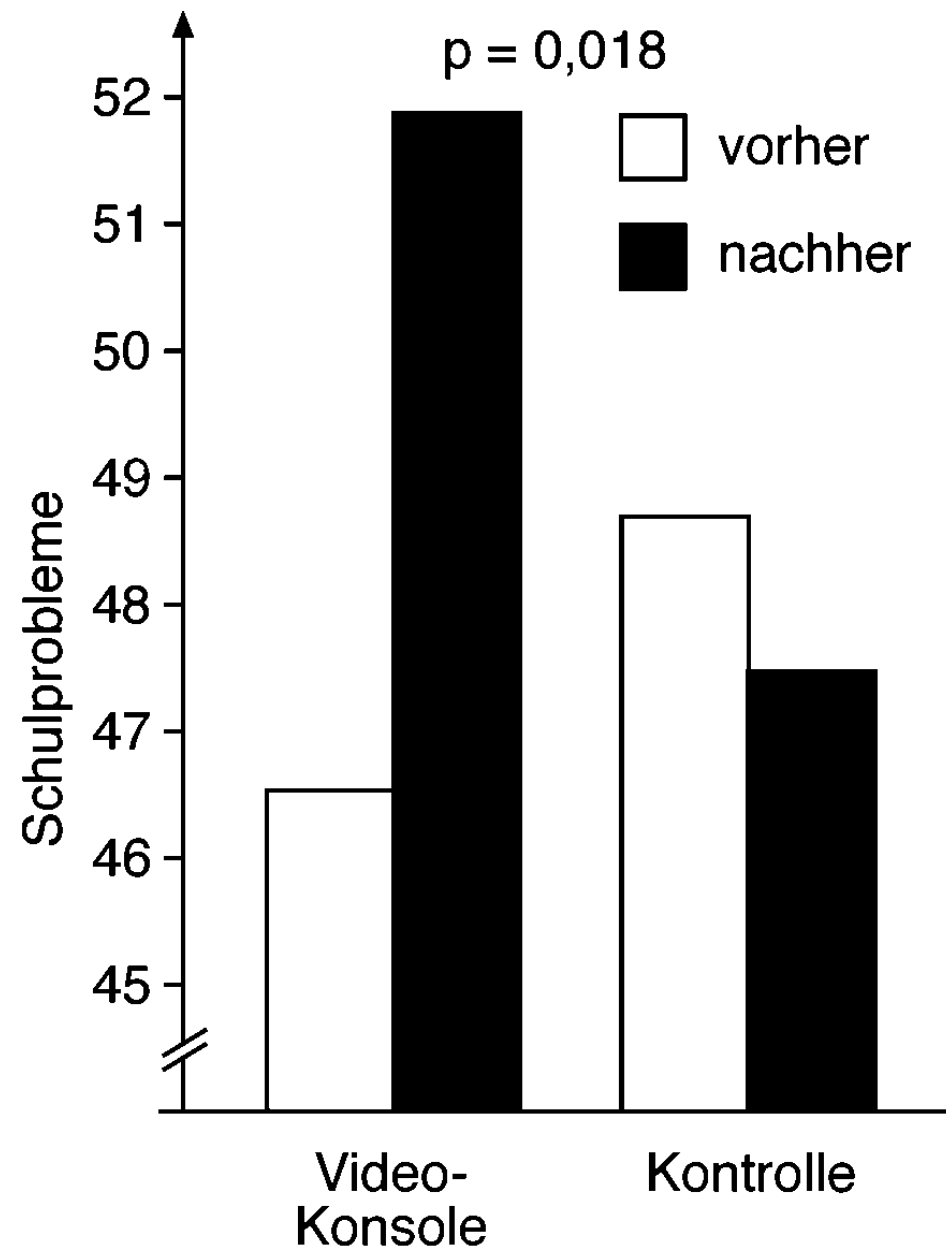
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BZgA

Bundeszentrale
für
gesundheitliche
Aufklärung

Gut hinsehen und zuhören!

Tipps für Eltern zum Thema „Mediennutzung in der Familie“



Was Computerspiele betrifft, so stehen Kindern, die nie an einer Playstation spielen, andere gegenüber, für die diese zum Alltag gehört. Dementsprechend zeigen sich bei Kindern auch Unterschiede in ihrer Medienkompetenz.

BZgA

**Bundeszentrale
für
gesundheitliche
Aufklärung**

Parents and Smartphones

Maternal Mobile Device Use During a Structured Parent–Child Interaction Task

Jenny Radesky, MD; Alison L. Miller, PhD; Katherine L. Rosenblum, PhD; Danielle Appugliese, MPH; Niko Kaciroti, PhD; Julie C. Lumeng, MD

Boston Medical Center

ACADEMIC PEDIATRICS

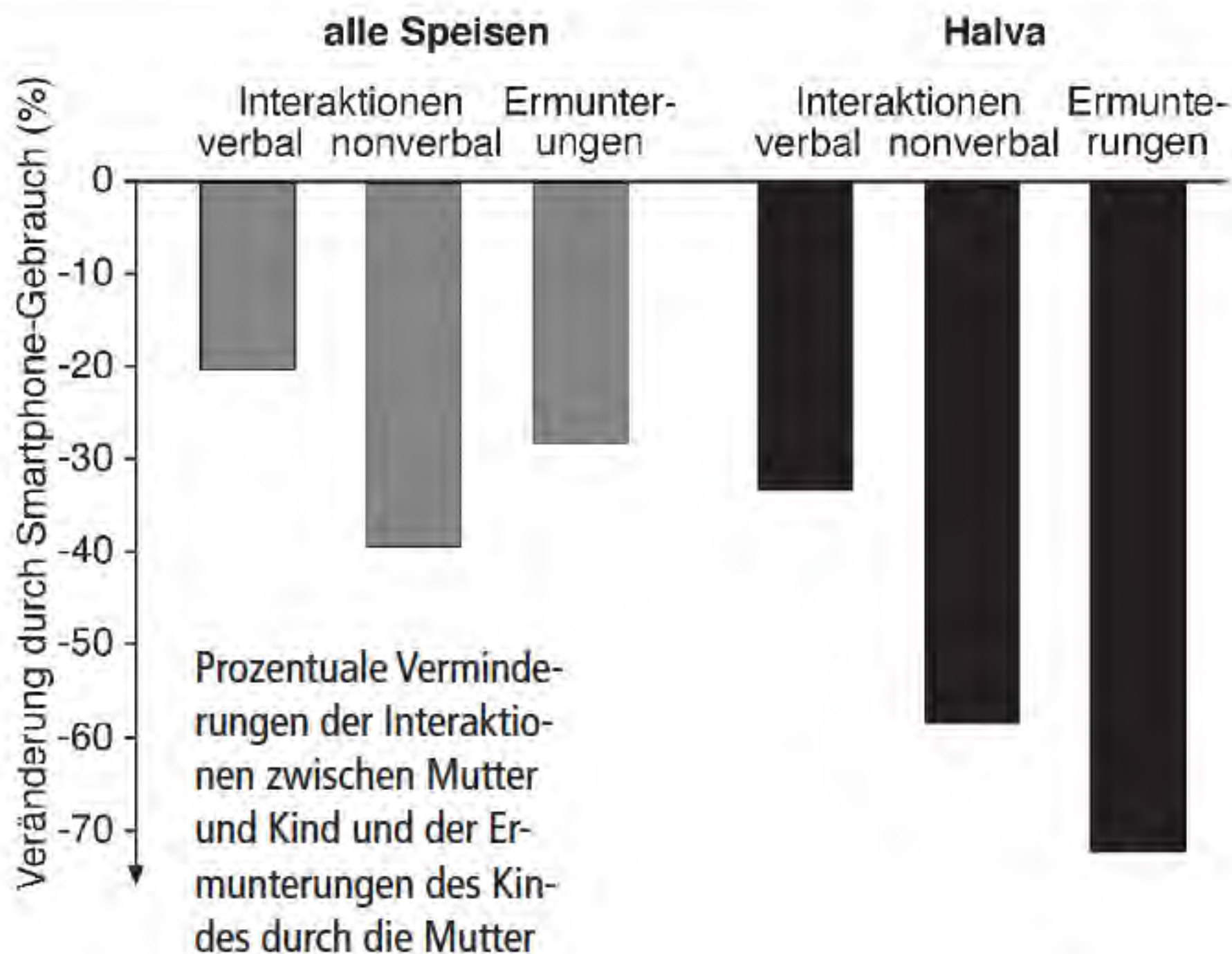
Copyright © 2015 by Academic Pediatric Association

Volume 15, Number 2

March–April 2015

METHODS: Participants included 225 low-income mother-child pairs. When children were ~6 years old, dyads were videotaped during a standardized protocol in order to characterize how mothers and children interacted when asked to try familiar and unfamiliar foods. From videotapes, we dichotomized mothers on the basis of whether or not they spontaneously used a mobile device, and we counted maternal verbal and nonverbal prompts toward the child. We used multivariate Poisson regression to study associations of device use with eating prompt frequency for different foods.

RESULTS: Mothers were an average of 31.3 (SD 7.1) years old, and 28.0% were of Hispanic/nonwhite race/ethnicity. During the protocol, 23.1% of mothers spontaneously used a mobile device. Device use was not associated with any maternal characteristics, including age, race/ethnicity, education, depressive



Siebenjähriger organisiert Demo gegen Handys

Emil und die nervigen Smartphones

Dass seine Eltern so oft aufs Smartphone schauen, nervte den siebenjährigen Emil. Deshalb hatte er die Idee, eine Kinderdemo gegen Handys zu organisieren. Nun überrollt der Ansturm seine Familie.

Von [Heike Klovert](#) ▼ und [Anne Martin](#) ▼ (Video)

September 2018

Demo gegen »Handy-Eltern«

Hamburg (avs). Dutzende Kinder haben in Hamburg unter dem Motto »Spielt mit mir! Nicht mit euren Handys!« gegen den Handy-Konsum ihrer Eltern protestiert. Sie wollen erreichen, dass Eltern sich mehr mit Kindern beschäftigen. Mit Plakaten zogen sie gestern durch St. Pauli und skandierten »Wir sind hier, wir sind laut, weil ihr auf eure Handys schaut!«



Mit selbstgebastelten Schildern wehren sich die Kinder gegen Smartphones.

(Foto: picture alliance/dpa)

Samstag, 08. September 2018

Emil und die Smartphone-Demo

Kinder fordern mehr Zeit mit Eltern

Risks and Side Effects (Society)

- Decreased Empathy, Trust and Solidarity
- Decreased level of general Education
- Decreased time spent in Nature
- Increased Loneliness and Anonymity
- Decreased Truth
- Increased Radicalization
- Decreased Privacy
- Endangered Democracy

SOCIAL SCIENCE

The spread of true and false news online

Soroush Vosoughi,¹ Deb Roy,¹ Sinan Aral^{2*}

We investigated the differential diffusion of all of the verified true and false news stories distributed on Twitter from 2006 to 2017. The data comprise ~126,000 stories tweeted by ~3 million people more than 4.5 million times. We classified news as true or false using

The New York Times

<https://nyti.ms/2GeTMa6>

Sunday Review

CONTRIBUTING OP-ED WRITER

YouTube, the Great Radicalizer

Zeynep Tufekci MARCH 10, 2018

A 61-million-person experiment in social influence and political mobilization

Robert M. Bond¹, Christopher J. Fariss¹, Jason J. Jones², Adam D. I. Kramer³, Cameron Marlow³, Jaime E. Settle¹ & James H. Fowler^{1,4}

Human behaviour is thought to spread through face-to-face social networks, but it is difficult to identify social influence effects in observational studies^{9–13}, and it is unknown whether online social networks operate in the same way^{14–19}. Here we report results from a randomized controlled trial of political mobilization messages delivered to 61 million Facebook users during the 2010 US congressional elections. The results show that the messages directly influenced political self-expression, information seeking and real-world voting behaviour of millions of people. Furthermore, the messages not only influenced the users who received them but also the users' friends, and friends of friends. The effect of social trans-

Experimental evidence of massive-scale emotional contagion through social networks

Adam D. I. Kramer^{a,1}, Jamie E. Guillory^{b,2}, and Jeffrey T. Hancock^{b,c}

We show, via a massive ($N = 689,003$) experiment on Facebook, that emotional states can be transferred to others via emotional contagion, leading people to experience the same emotions without their awareness. We provide experimental evidence that emotional contagion occurs without direct interaction between people (exposure to a friend expressing an emotion is sufficient), and in the complete absence of nonverbal cues.

PNAS | June 17, 2014 | vol. 111

Computer-based personality judgments are more accurate than those made by humans

Wu Youyou^{a,1,2}, Michal Kosinski^{b,1}, and David Stillwell^a

^aDepartment of Psychology, University of Cambridge, Cambridge CB2 3EB, United Kingdom; and ^bDepartment of Computer Science, Stanford University, Stanford, CA 94305

This study compares the accuracy of personality judgment—a ubiquitous and important social-cognitive activity—between computer models and humans. Using several criteria, we show that computers' judgments of people's personalities based on their digital footprints are more accurate and valid than judgments made by their close others or acquaintances (friends, family, spouse, colleagues, etc.). Our findings highlight that people's personalities can be predicted automatically and without involving human social-cognitive skills.

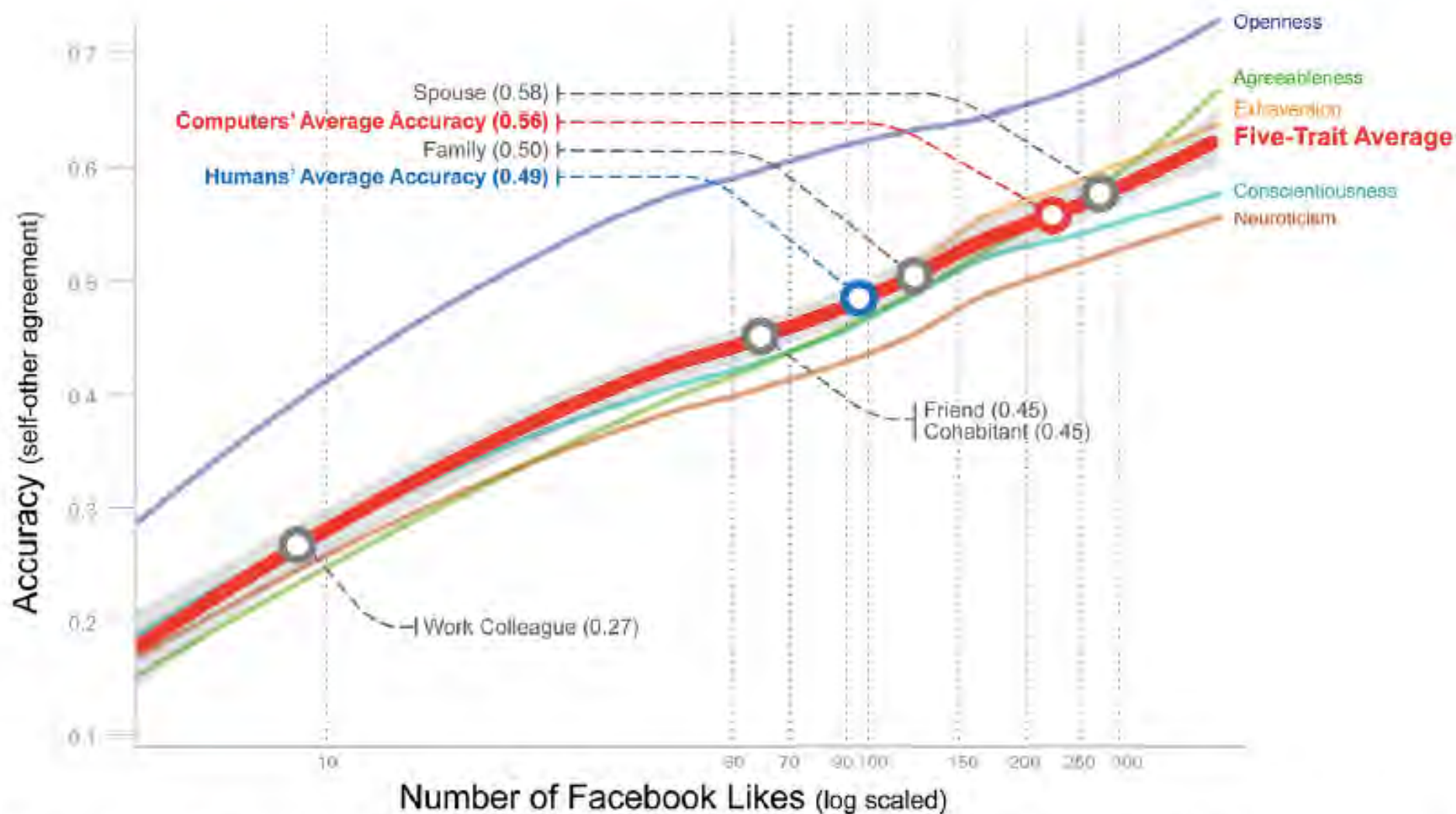


Fig. 2. Computer-based personality judgment accuracy (y axis), plotted against the number of Likes available for prediction (x axis). The red line represents the average accuracy (correlation) of computers' judgment across the five personality traits. The five-trait average accuracy of human judgments is positioned onto the computer accuracy curve. For example, the accuracy of an average human individual ($r = 0.49$) is matched by that of the computer models based on around 90–100 Likes. The computer accuracy curves are smoothed using a LOWESS approach. The gray ribbon represents the 95% CI. Accuracy was averaged using Fisher's r -to- z transformation.

Psychological targeting as an effective approach to digital mass persuasion

S. C. Matz^{a,1}, M. Kosinski^{b,2}, G. Nave^c, and D. J. Stillwell^{d,2}

^aColumbia Business School, Columbia University, New York City, NY 10027; ^bGraduate School of Business, Stanford University, Stanford, CA 94305; ^cWharton School of Business, University of Pennsylvania, Philadelphia, PA 19104; and ^dCambridge Judge Business School, University of Cambridge, Cambridge, CB2 3EB, United Kingdom

PNAS 2017

A

High Extraversion



Dance like no one's watching
(but they totally are)

Low Extraversion



Beauty doesn't have to shout

B

High Openness



Aristoteles? The Seychelles? Unleash your creativity and challenge your imagination with an unlimited number of crossword puzzles!

Low Openness



Settle in with an all-time favorite! The crossword puzzle that has challenged players for generations.

Fig. 1. Examples of ads aimed at audiences characterized by high and low extraversion (A) as well as high and low openness (B). Fig. 1A, Left courtesy

Psychological targeting as an effective approach to digital mass persuasion

S. C. Matz^{a,1}, M. Kosinski^{b,2}, G. Nave^c, and D. J. Stillwell^{d,2}

PNAS 2017

^aColumbia Business School, Columbia University, New York City, NY 10027; ^bGraduate School of Business, Stanford University, Stanford, CA 94305; ^cWharton School of Business, University of Pennsylvania, Philadelphia, PA 19104; and ^dCambridge Judge Business School, University of Cambridge, Cambridge, CB2 3EB, United Kingdom

footprints, such as their Facebook Likes or Tweets. Capitalizing on this form of psychological assessment from digital footprints, we test the effects of psychological persuasion on people's actual behavior in an ecologically valid setting. In three field experiments that reached over 3.5 million individuals with psychologically tailored advertising, we find that matching the content of persuasive appeals to individuals' psychological characteristics significantly altered their behavior as measured by clicks and purchases. Persuasive appeals that were matched to people's extraversion or openness-to-experience level resulted in up to 40% more clicks and up to 50% more purchases than their mismatching or unpersonalized counterparts. Our findings suggest that the application of psychological

The Washington Post

Politics

Democratic Party sues Russia, Trump campaign and WikiLeaks alleging 2016 campaign conspiracy

Risks and Side Effects (body)

- bad body posture
- Overweight
- Diabetes (Stroke, heart attack)
- Hypertension (Stroke, heart attack)
- Short sightedness
- Sleep disorders
- Stress (Infections, cancer)
- high-risk behavior (road accidents, STMs)

Risks and Side Effects (mind)

- Addiction
- Aggression
- Anxiety
- Depression & Suicide
- decreased empathy
- decreased life satisfaction

Risks and Side Effects: Education

- Decreased attention
- Decreased learning
- Decreased knowledge
- More dementia

Risks and Side Effects (Society)

- Decreased Empathy, Trust and Solidarity
- Decreased level of general Education
- Decreased time spent in Nature
- Increased Loneliness and Anonymity
- Decreased Truth
- Increased Radicalization
- Decreased Privacy
- Endangered Democracy

To sum up

- Digital IT comes with serious Risks & Side Effects regarding Mind, Body & Society
- There has not been any serious Assessment of theses Risks & Side Effects
- We are constantly brainwashed by the most powerful lobby on Earth: Hype & Fake News
- The damage is most serious during brain development

Therefore

- We must not sacrifice the health and the education of our children – our most precious resource, i.e., our future – to profit interests of the richest companies on Earth.

Therefore

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- If we do, we act irresponsibly.

Therefore

- We must not sacrifice the health and the education of our children – our most precious resource, i.e., our future – to profit interests of the richest companies on Earth.
- If we do, we act irresponsibly.
- Digital IT is a great tool that should serve all of us, not just a handful of Billionaires.

Therefore

- We must not sacrifice the health and the education of our children – our most precious resource, i.e., our future – to profit interests of the richest companies on Earth.
- If we do, we act irresponsibly.
- Digital IT is a great tool that should serve all of us, not just a handful of Billionaires.
- Please, TAKE NOTE – THANKS!