

Cultural differences and vaccine advocacy

Activity report

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CEREB

Center for Empirical Research
in Economics and Behavioral Sciences



? Intercultural differences?

Western and Eastern Cultures self construals differ: (Markus & Kitayma, 1991)

Asia: collective benefit, interdependent, focus on social group

USA: individual benefit, independent, focus on individual

Will communicating the social benefit of vaccination have a greater positive influence on Eastern than on Western cultures? Will there be less free-riding in the East?

Piloting ...

- 3 Bachelor and 1 Master theses and some more pretests to optimize

- the scenarios
- the display of herd immunity information
- the numbers

• Challenges

- translation
- recruitment

Prob adverse ev. = ~~30%~~ 30% // (2% / 42% vax

APACI Hauptstudie 1
within

Finales Design: 7 (Kultur) \times 4 (vax) \times 2 (Ind/soe.) \times 2 (Daret.) \times R_0

WEST/IND. {

Will communicating the social benefit of vaccination have different effects in Asian vs. Western cultures?

Vietnam | 1-3
China | 3

u vax

60

Infections-Risiko

Injektion (f. x 30%)

Will interventions to raise health care workers' vaccination uptake be equally effective across cultures?

ab: Infektionsrisiko

↳ IA erwartet

↳ Bandwagening i HE für vax

25/11/2021



Study 1:

communicating the social benefit of vaccination



Scenario

Regular check-up
doctor explains herd immunity

information about a disease

information about vaccination
vaccine uptake

resulting probability of infection
probability of side effects

(recall test)

intention to vaccinate

- contagiousness (within)

- $R_0 = 3$

- $R_0 = 15$

- vaccine uptake in the population (within)

- 42%

- 62%

- herd immunity information with special emphasis of

- individual benefit

- social benefit

- control

- culture

- individualistic (Germany, USA)

- collectivistic (South Korea, India, Hong Kong)

- counterbalancing and variants of visual/textual presentation

실문 참여자에게:

독일의 에르푸르트 대학(the University of Erfurt)에

이 설문조사는 15-20분 정도 소요되며, 화면 우측 상단에 위치
부분으로 구성되어 있습니다. 처음과 마지막 부분은 특정한 상
결정을 묻는 부분입니다.

설문을 진행하는 동안 여러분께 주어지는 질문 순서대로 답변을
주신 답변을 활용할 수 있는 유일한 방법이기 때문에 매우 중요

설문조사를 앉은 자리에서 한 번에 끝낼 수 있는 충분한 시간이
든 통신 프로그램 (예: 채팅창 또는 이메일)을 닫아주시기 바

설문조사에 응해주시는 분들 중 추첨을 통해, 13만원 상당의
입력해주시기 바랍니다.

이번 설문조사는 에르푸르트 대학에서 지원하는 이윤추구와 무

나는 이 설문조사에 참여하는 것을 동의하고, 나의 모든

첫 번째 부분을 시작



Dear participant:

Thank you for taking part in this study conducted by the University of Erfurt (Germany).

The study will take around 15-20 minutes and you can follow your progress on a progress bar in the top right corner of your screen. The study consists of several parts; in the first and last part we will ask for your opinion on certain things, in the second part we will ask you to imagine yourself in a fictitious scenario and make some decisions.

It is very important that you **answer all questions in the order in which they are presented to you** and that you do not change previously given answers. This is important as this is the only way we will be able to make use of your answers. All of your answers will be used exclusively for scientific purposes.

Please wait to start the study until you will have enough time to complete it in one sitting. In addition, please close all types of communication programs (e.g. chat or e-mail) to avoid distractions.

For your participation you will take part in a lottery for gift certificates, each worth \$95. You can leave your email address on the last page of the study to take part in the lottery.

This is a non-commercial study financed by the University of Erfurt.

I agree to participate in this study and understand that all my responses will be used for scientific purposes only.

Please click CONTINUE to start with the first part of the study.

मैं इस अध्ययन में सहभागिता के लिए सहमत हूँ और समझता/समझती हूँ कि मेरे सभी जवाब केवल वैज्ञानिक उद्देश्यों के लिए इस्तेमाल किये जाएंगे।

अध्ययन के पहले भाग के साथ शुरू करने के लिए कृपया CONTINUE (जारी रखें) पर क्लिक करें।

Preview

部分組成：第一部分和最後一部分是就某些事情

，因為只有這樣，我們才能夠採納您的答案。

或者電子郵件) 以避免分散注意力。

後一頁留下電郵地址參加抽獎活動。

rt (Deutschland) durchgeführt wird

ritt können Sie auf dem Fortschrittsbalken in der
ehreren Teilen; im ersten und letzten Teil werden
eil werden wir Ihnen ein fiktives Szenario

olge beantworten und dass Sie vorher gegebene
e Weg ist, wie wir Ihre Antworten verwenden
ke verwendet.

n die Studie in einer Sitzung zu beenden. Um
sprogramme (z. B. Chat oder Email) zu schließen.

enkgutscheine im Wert von 80,00 € teil. Um an
Ihre Email-Adresse angeben.

Dies ist eine nicht kommerzielle Studie, die von der Universität Erfurt finanziert wird.

Ich stimme zu an dieser Studie teilzunehmen und verstehe, dass meine Antworten ausschließlich für wissenschaftliche Zwecke verwendet werden.

Bitte drücken Sie WEITER um mit dem ersten Teil der Studie zu beginnen.

Samples Study 1

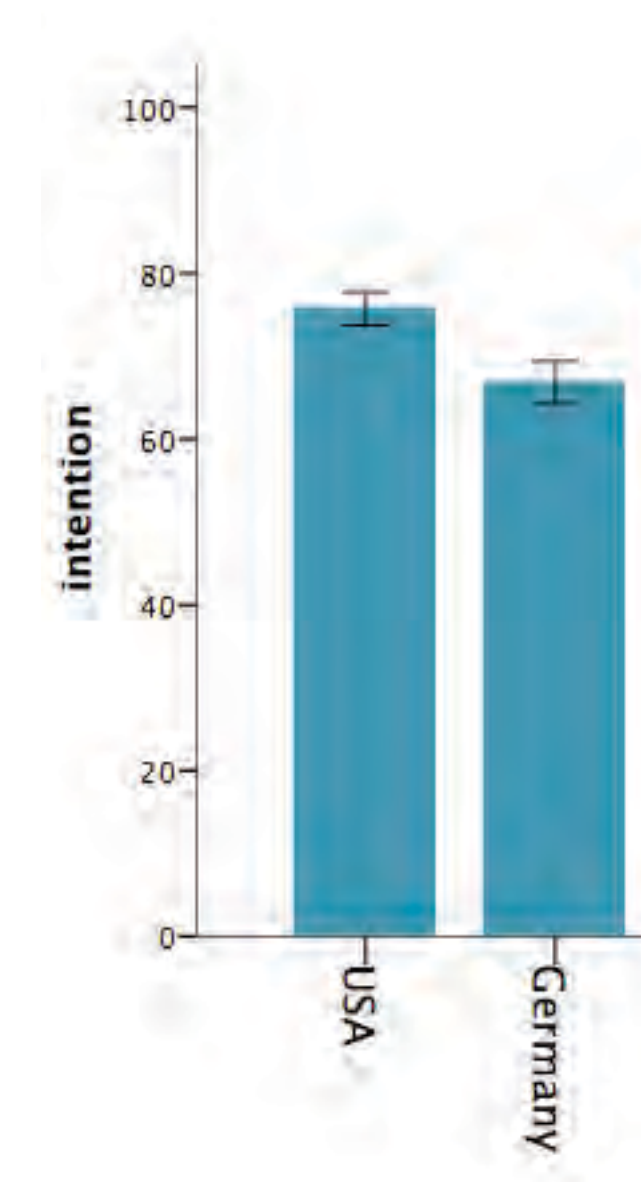
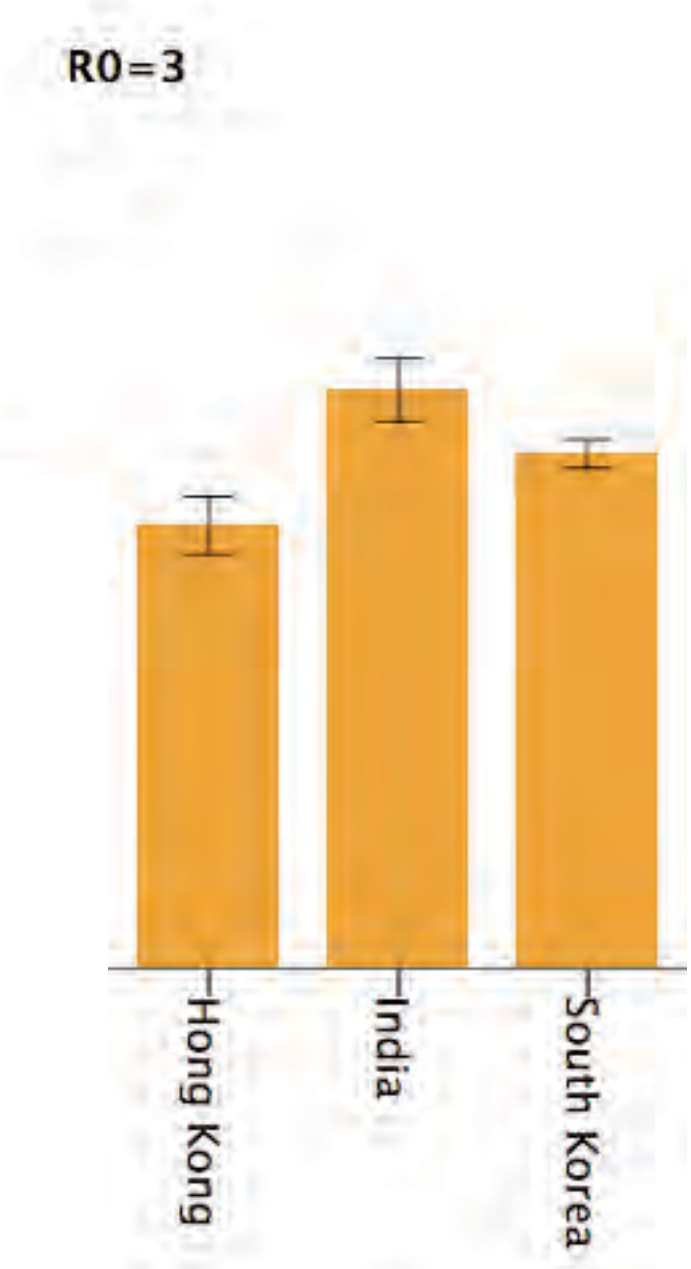
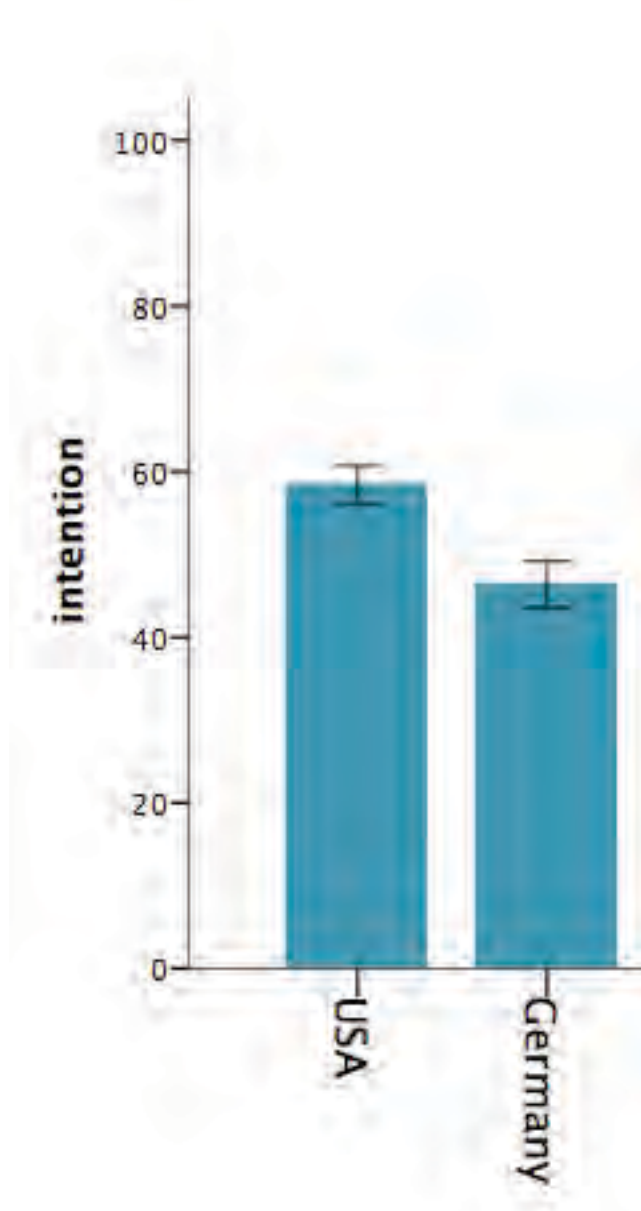
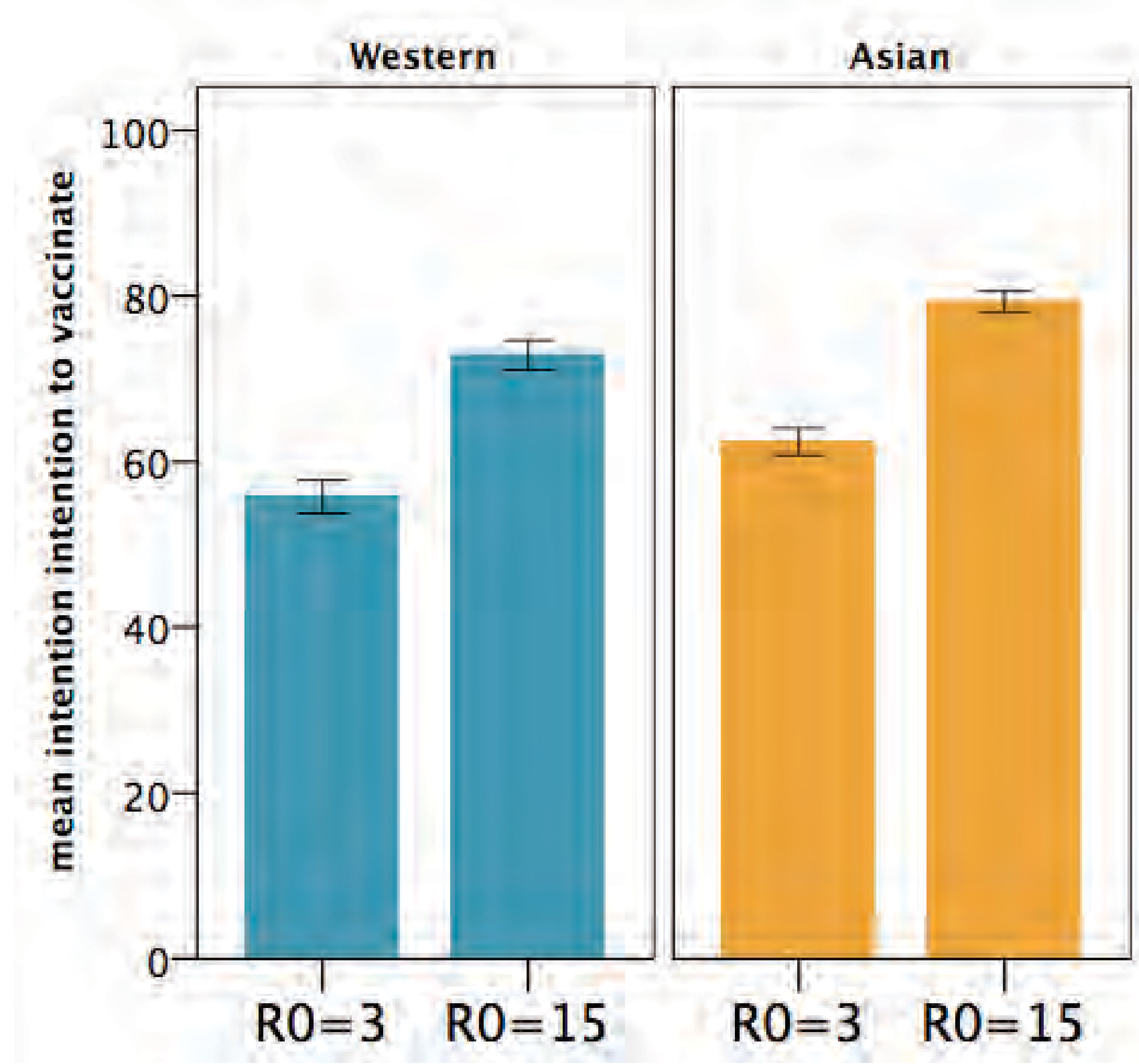
Sample					
N	982				
Cultural background	Eastern (n = 487)			Western (n = 495)	
Country	India (n = 75)	Hong Kong (n = 69)	South Korea (n = 343)	Germany (n = 202)	USA (n = 293)
Mean age	30	22	28	24	36
Percentage female	32	81	46	83	50

collectivistic
tight

individualistic

- participants from Eastern/Asian cultures score significantly higher on **collectivism** (Shulruf, 2007, 2011) and on **tightness** values (Gelfand et al., 2006, 2011) and lower on **individualism** (Shulruf, 2007, 2011) compared to participants from Western cultures

Results Study 1

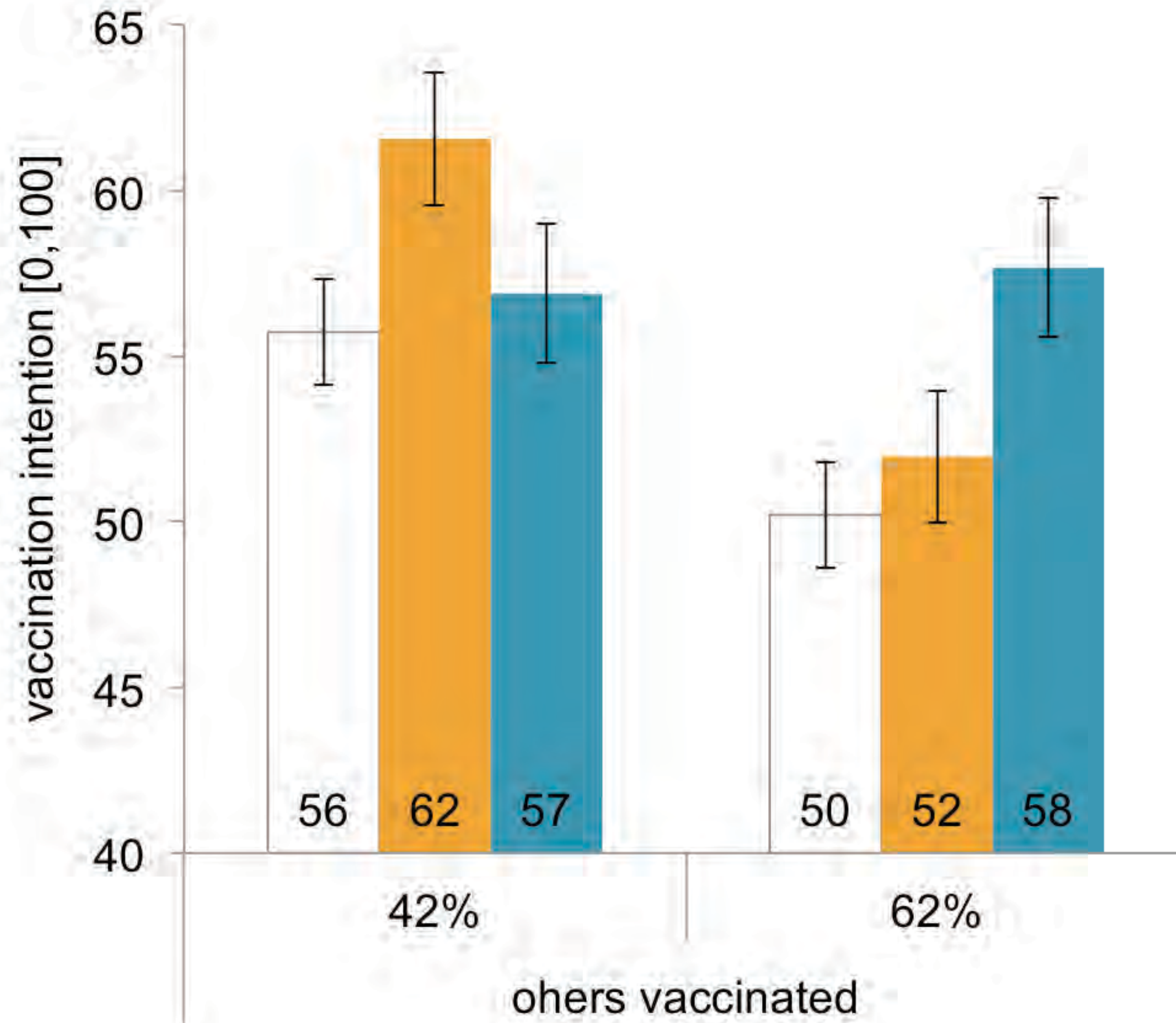


.....→
communication?
vaccine uptake?
culture?

.....→
only effect: culture

Bandwagoning or free-riding?

R0 = 3



communication

□ control

■ herd immunity - individual benefit

■ herd immunity - social benefit

vaccine uptake:

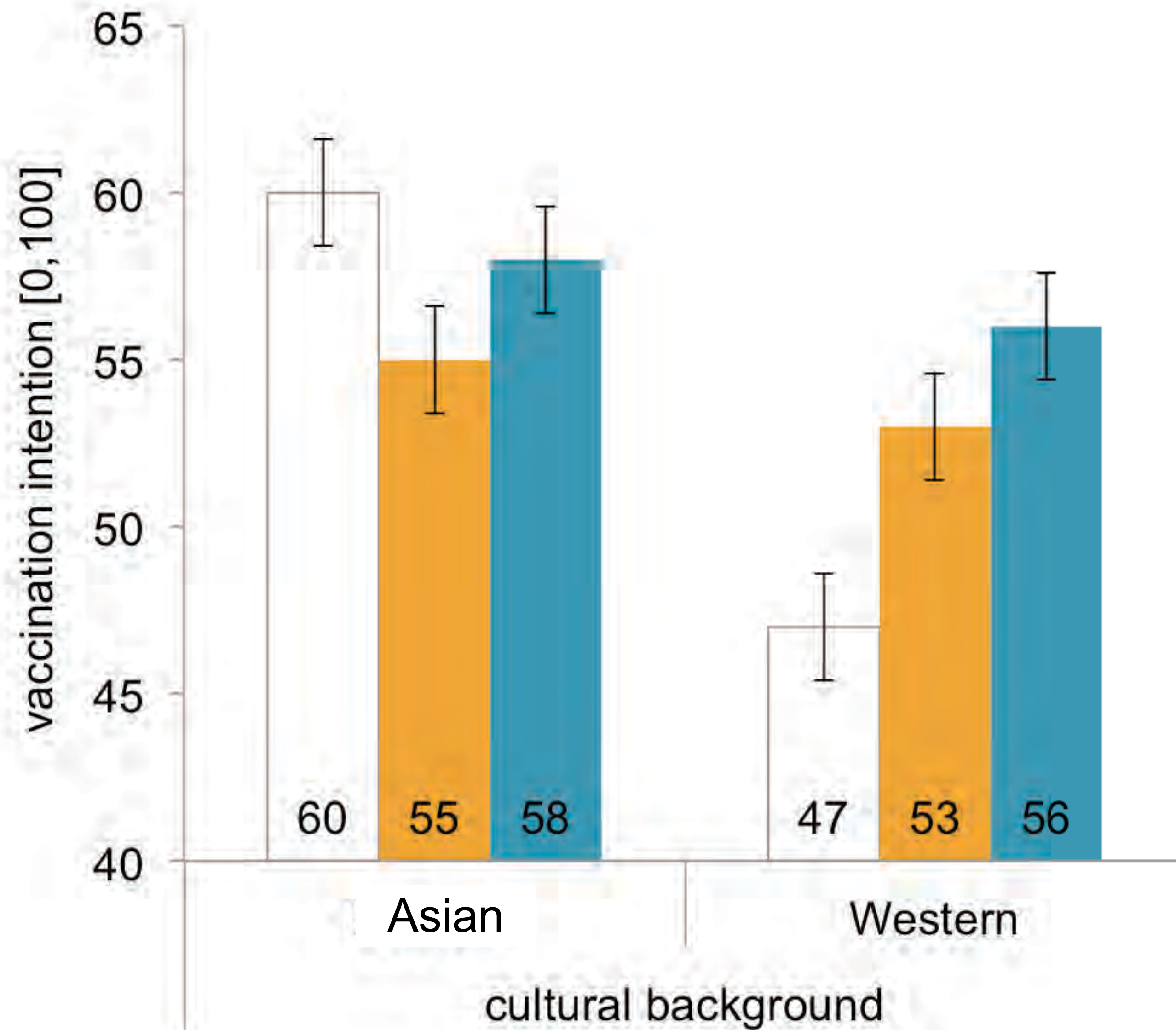
$F(1, 965) = 4.99, p = .026, \eta_p^2 = .005$

vaccine uptake × communication:

$F(2, 965) = 6.05, p = .002, \eta_p^2 = .012$

no interaction with culture

R0 = 3



communication

□ control

■ herd immunity - individual benefit

■ herd immunity - social benefit

cultural background:

$F(1, 965) = 13.40, p < .001, \eta_p^2 = .014$

cult. background × communication:

$F(2, 965) = 6.80, p = .001, \eta_p^2 = .014$

Interim summary Study 1

- individuals are sensitive to the decisions's dynamic incentive structure and adapt their vaccination intention accordingly
- vaccination intention decreases if population uptake increases and individual outcome maximization suggests non-vaccination —> free-riding
- communicating the social benefits of vaccination reduces free-riding

Culture matters!

- individuals with Asian cultural background show higher vaccination intentions
- individuals with Western cultural background are more affected by communicating herd immunity



Study 2:

Nudging health care workers to vaccinate

- vaccine uptake of health care workers is too low, especially regarding influenza (Europe: 30%, US: below 70%; desirable: 75%)
- „Little information is available on healthcare worker coverage in Asian-Pacific countries, although high coverage has been achieved in several countries: 78% was reported in South Korea“ (Jennings, 2013) - how much is enough in hospital settings?
- Nudging has proven successful to increase vaccination in hospital settings (Chapman et al, 2010)
 - opt-in vs. opt-out
- cultural differences in the effectivity of nudging?
- mediators for cultural differences?

Scenario: Health Care Workers Game

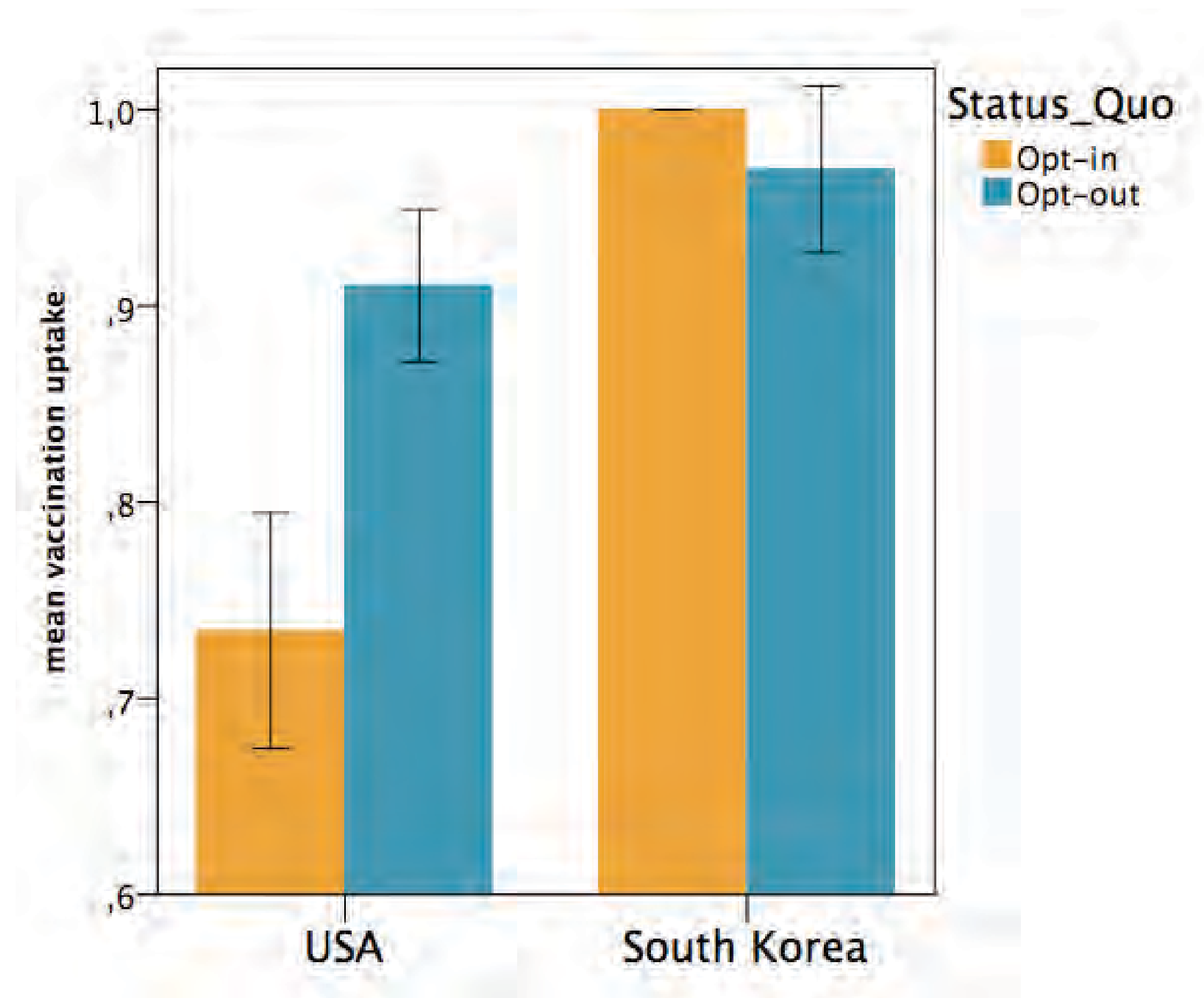
- Imagine you are a hospital employee with 9 colleagues and 20 patients
 - employee: 10 health points
 - patients: 5 health points
- Disease
 - patients: lose 4 health points
 - employee: no points lost if sick
- Vaccination
 - patients: not possible
 - employee: costs 2 points and on average 1 extra-point for side effects
- **Dilemma: health care workers are better off if they do not vaccinate. But: Social welfare is maximized if they vaccinate**



Manipulations & Hypotheses

- required vaccine uptake: 70% vs. 100% (= social optimum)
- Decision architecture: Status quo
 - opt in
 - Vaccination is voluntary. If you would like to make an appointment, please contact: ...
 - opt out
 - An appointment for vaccination is reserved for you on Monday at 9.30 am. Vaccination is voluntary. If you would like to resign from the appointment, please contact: ...
- Hypothesis:
 - opt-in < opt-out, independent from culture

Nudging effect: USA only



USA: n = 423, South Korea: n = 126

- country affects vaccine uptake
 - main effect $F(1,541) = 23.2, p < 0.001$
- country affects effectivity of nudge
 - interaction $F(1,541) = 8.5, p = 0.004$
- ceiling effect in South Korea
- what explains the difference?

Seeing vaccination as
a pro-social act

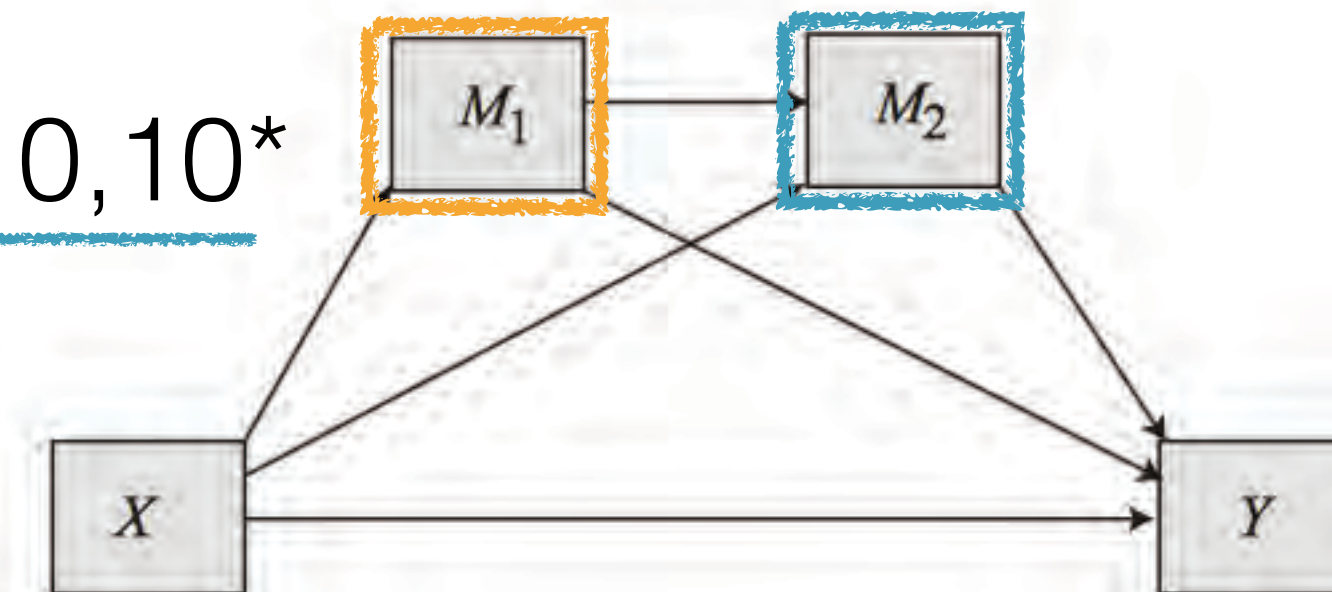
- I am certain that I can protect others when I am getting vaccinated.

self-efficacy

- If I wanted to I could easily have a vaccination.
- For me, having a vaccination would be...(difficult/easy)
- I am certain that I could get vaccinated.

Mediators: self-efficacy and seeing vaccination as a pro-social act

- Nationality affects perceived self-efficacy and the perceived protection of others
- Participants from **South Korea have a significantly higher self-efficacy and see vaccination as a prosocial act**
- Both variables mediate the effect from nationality (x) on vaccine uptake (y) (PROCESS Model 6; Hayes, 2014)
- indirect effect via self efficacy (M1): 0,09*
- indirect effect via seeing vaccination as prosocial act (M2): 0,10*





Improving medical decision making and health promotion through culture-sensitive health communication – An agenda for science and practice



Scientific small group meeting of experts

Culture Sensitive Health Communication

May 22nd-24th, 2014 | Erfurt, Germany
<http://sho.rtlink.de/meeting>



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Lessons learned for **culture-sensitive vaccine advocacy**

- influencing Asian behavior was more difficult (ceiling effect) - „end-game“ strategies especially challenging
- effective strategies from the literature might not work across different cultural settings
- other cultural sensitive strategies need testing:
 - e.g. framing
 - boundary condition: base-rate of respective behavior
- culture (?) may influence the perception of vaccination
 - disease and infection control seems to be a more „social“ issue in Asia - matches literature regarding cultural differences
- advocacy implications
 - change perception of Western cultures, make decisions more social
 - improve self-efficacy
 - communicate the social benefit of vaccination



Thank you!

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