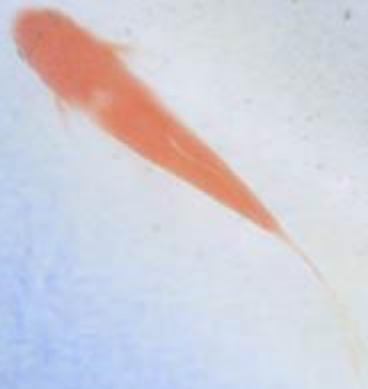


Cultural differences on the role of norms on environmental behaviors

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Outline

1. The difference in the role of **subjective norm** in Western and Asian cultures
2. How do we acquire these cultural differences
3. Interaction of **descriptive norm** and collectivism

1 Role of subjective norms on environmental behavior

- Subjective norm (Theory of reasoned action; Fishbein & Ajzen (1975), TPB; Ajzen (1991))
 - Expectation from significant others and willingness to comply with it.
 - Attitudes: internal value
 - Subjective norm: external pressure

Cultural differences

- Markus & Kitayama (1991) Important values differ among cultures
 - Western countries (e.g. Europe and North America): independence and individual values.
 - Asian countries: interdependence, relationship with others
- -> Subjective norm would play more important role in Asian countries than in Western countries

Determinants of Environmental behaviors in Germany and Japan

(Ando, Ohnuma, Blöbaum, Matthies & Sugiura, 2010)

- The study compared the determinants of environmental behavior between German and Japanese citizens
- Individual and collective environmental behavior
- Respondents
 - Random sampling in Cologne (Germany) and Nagoya (Japan)
 - Germany: 996 valid answers.
 - Japan: 531 valid answers

Result of hierarchical regression analysis (reducing behavior)

	STEP 1		STEP 2		STEP 3	
	β		β		β	
Sex	.10	***	.06	**	.06	**
Age	.26	***	.16	***	.16	***
County			.17	***	.20	***
Attitudes			.09	***	.04	
Subjective norm			.13	***	.52	***
Perceived behavioral control (PBC)			.31	***	.07	
Eco-net			.08	**	-.10	
Attitudes*Country					.05	
Subjective norm*Country					-.39	***
PBC*Country					.25	**
Eco-net *Country					.17	
R^2	.08		.30		.32	
ΔR^2	.08		.23		.01	
F	57.42	***	85.48	***	57.04	***

Subjective norm had positive effects in both countries

Stronger effect in Japan

Discussion (1)

- Subjective norm have stronger impacts in Japan.
 - In Japan, people are more sensitive to the norms of close others.
 - However the impact is not always strong.
 - Environmental behaviors that is observable from others are more likely to be affected.

2 Next question

- Developmental change

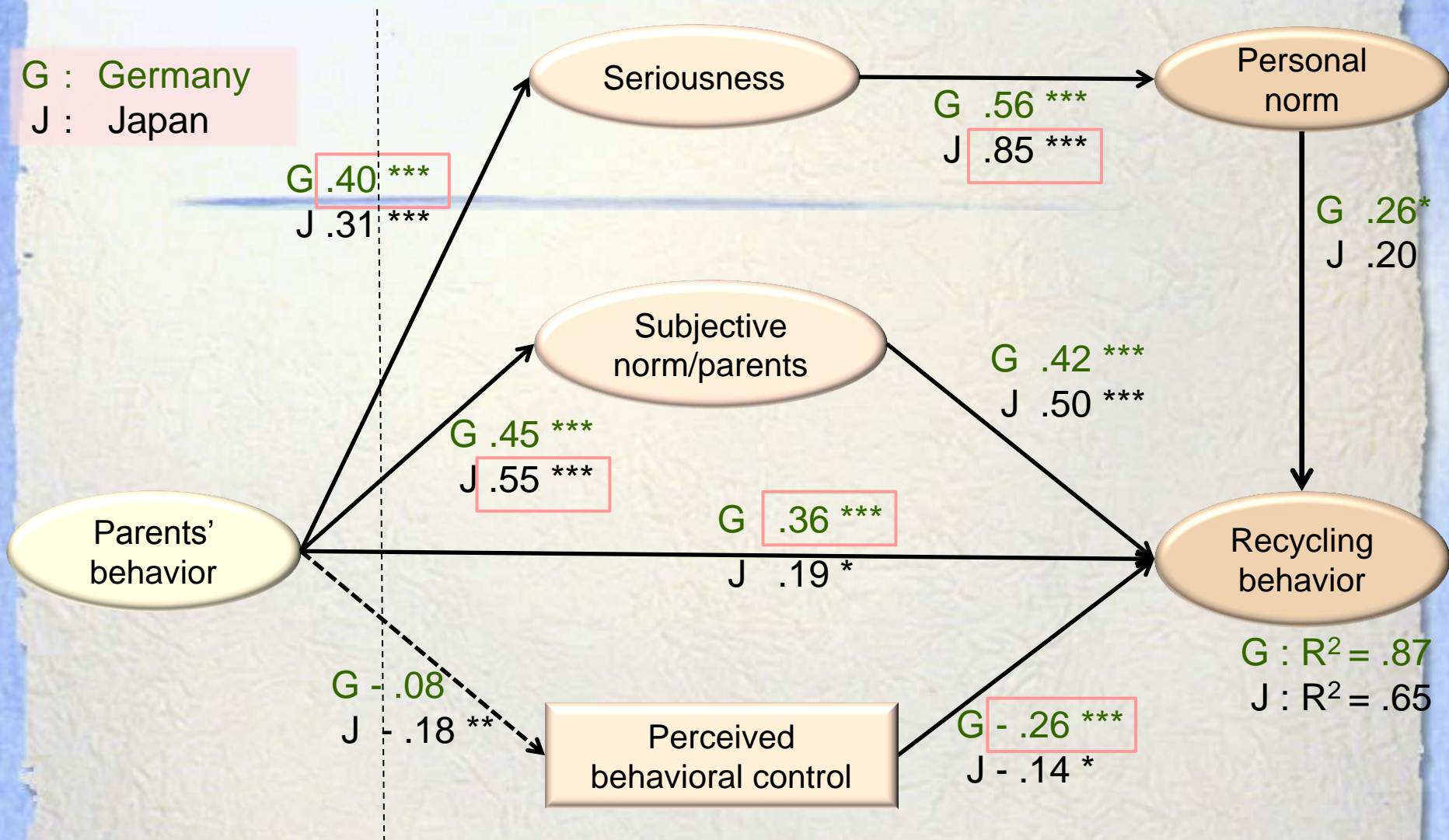
- How do we acquire our environmental attitudes and behaviors?
- How do we adopt to cultural norms?



Transmitting environmental behaviors to next generation

(Ando, Yorifuji, Ohnuma, Matthies & Kanbara, 2015)

- Investigate the parental influence on children's environmental behavior
- Social learning theory (Bandura, 1977): Children primarily learn from observation.
 - -> Parents' behavior affect children's environmental behavior
- Respondents:
 - Elementary school children of 9-10 years old and one of their parents in Germany and Japan.
 - Germany: 221 pairs, Japan: 365 pairs



Model fit: CMIN = 154.12, df = 66, GFI = .953, RMSEA = .048

Fig. 1 The result of multi-group model between Germany and Japan for children

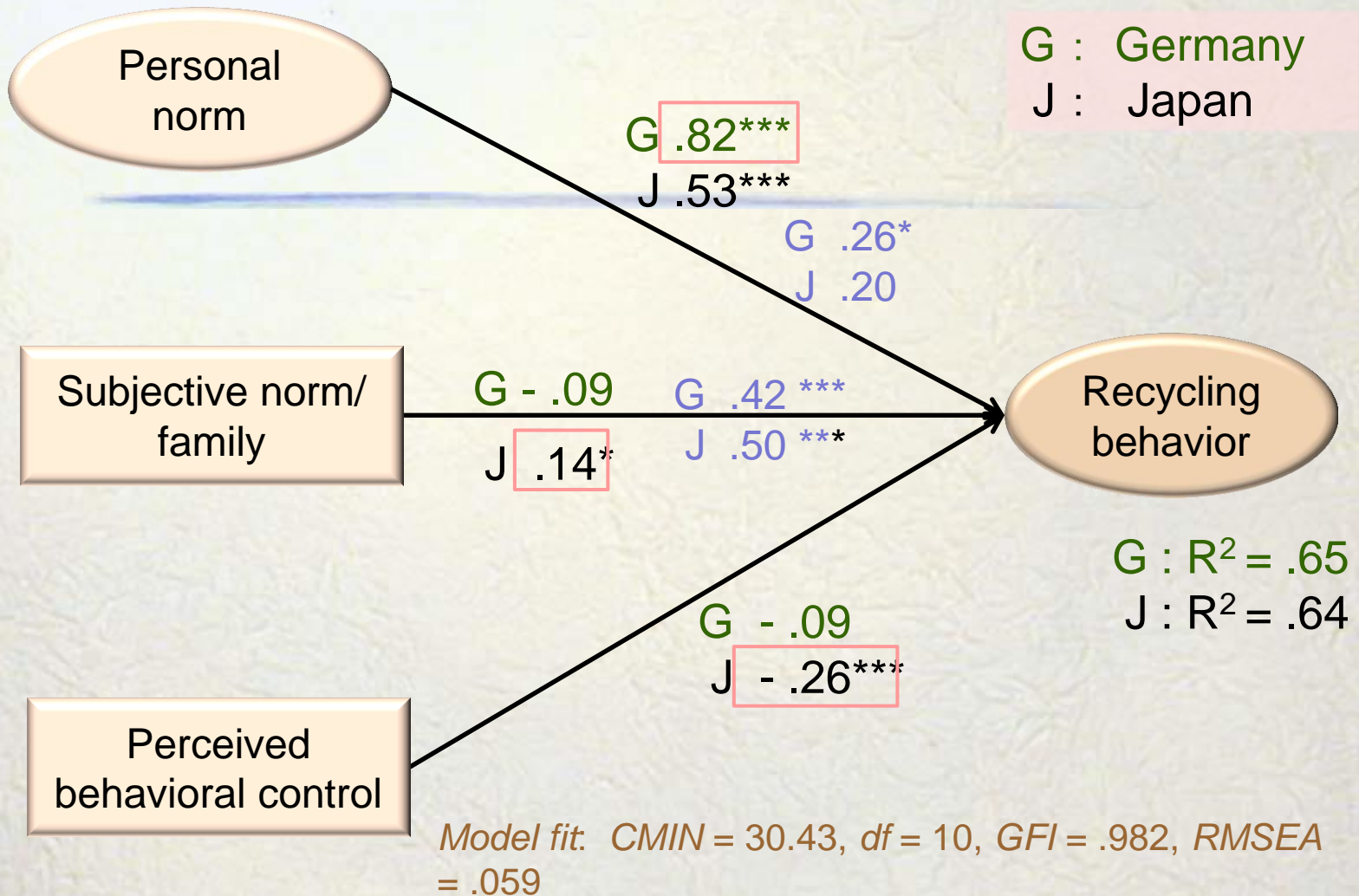


Fig. 2 Determinants of parents' behavior in Germany and Japan

Discussion (2)

- At early age, **observation** of parents' behavior affect children's environmental behavior.
- Subjective norm is more important for children regardless of culture.
 - Children are more eager to follow parents' expectations
- As children grow older, subjective norms are internalized in Germany. In Japan, it still works as an external pressure.

3 Influence of descriptive norm

- Subjective norm: norm of close others
- Descriptive norm:
 - Perception that many others are conducting the behavior(Cialdini et al. 1991)
 - norm from anonymous others, group norm
- Previous studies found that descriptive norms have impacts on environmental behaviors (e.g. Schultz et al., 2008)

Cultural differences

- Hinkle & Brown (1990) suggested social identity theory should be more applicable to collectivistic groups.
- Individuals with high **collectivism** would be more sensitive to group norms.
- ->Descriptive norm will work stronger for individuals with high collectivism.

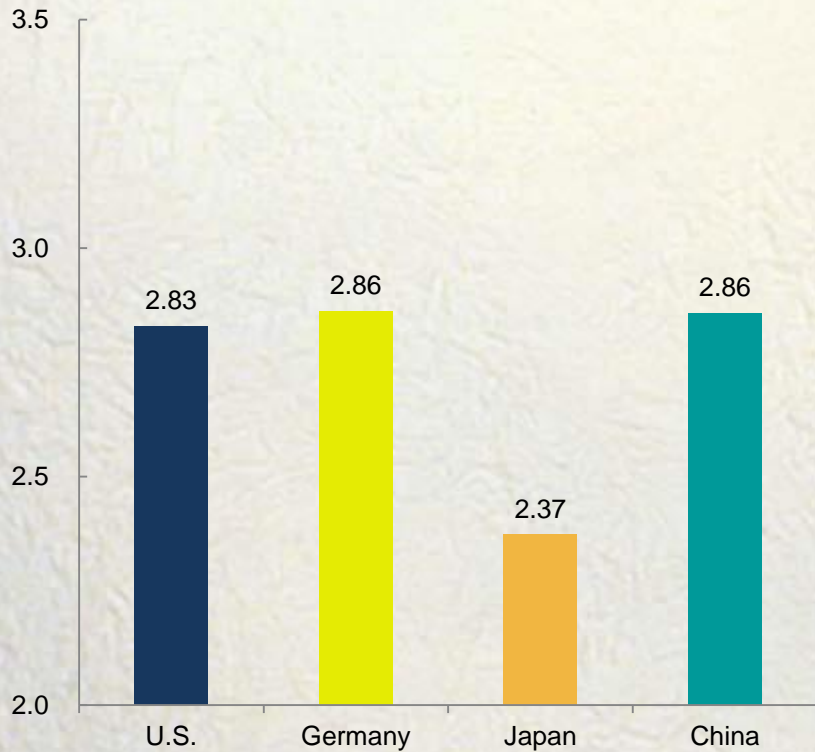
Survey in the U.S., Germany, Japan and China

Ando, Ohnuma, Hübner, Schultz and Li, 2015

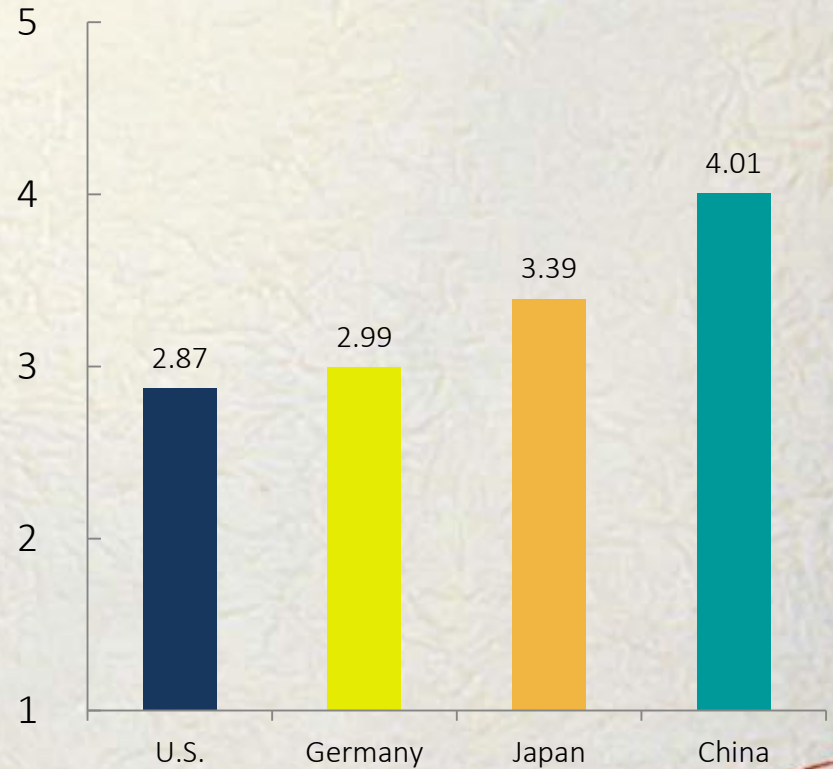
- Examine the effect of descriptive norm on environmental behavior in four countries.
- Respondents: University students
 - Valid answers: U.S.: 87, Germany: 296 , Japan: 661, China: 184

Mean scores

Reducing Behavior



Collectivism



Result of regression analysis (reducing behavior)

	U.S. N=87	Germany N=296	Japan N=611	China N=184
Grade	.010	.070	-.010	.006
Sex	-.062	.007	-.013	-.015
Descriptive norm(Students)	.104	.042	.104 *	.270 ***
Descriptive norm(Community)	-.104	.106	.109 **	.074
Subjective norm	.079	.035	.085 *	.049
Personal norm	.260 *	.401 ***	.190 ***	-.005
Perceived behavioral control	-.419 ***	-.227 ***	-.311 ***	-.407 ***
Collectivism	.177	.014	.043	-.042
Collectivism*Descriptive norm(Students)	-.011	.023	.091 *	.156 *
Collectivism*Descriptive norm(Community)	.077	-.143 *	.055	-.022
R^2	.49	.43	.29	.39
F	6.69 ***	18.06 ***	24.04 ***	10.59 ***

* $p < .05$, ** $p < .01$, *** $p < .001$

Discussion (3)

- Collectivism itself did not have main effect.
- Descriptive norm was more powerful for collectivistic individuals.
 - But it was only in Japan and China
- Collectivistic individuals + group norm salient -> environmental behavior

An aerial photograph of a city waterfront, likely Singapore, featuring a large Ferris wheel (Singapore Flyer) and modern buildings. The text "Thank you very much for your attention!" is overlaid in white. The background shows a wide river or bay with several bridges and industrial structures in the distance.

**Thank you very much for
your attention!**

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