

Having an Interdependent Self-Construal Leads to Greater Weighting of Data In Causal Judgment

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Self-Construal & Judgment: Interdependents Better at Background

Research on cultural differences (e.g., Miyamoto, et al., 2006) finds that:

- members of Eastern cultures – who are relatively more collectivist or **interdependent** – are better at tasks requiring sensitivity to background contextual information
- members of Western cultures – who are relatively more **independent** – are better at tasks requiring sensitivity to salient foreground information.
- These cultural differences in cognition can be duplicated by priming people of either culture with an **interdependent** or an **independent** prime (e.g., Kühnen, Hannover, & Schubert, 2001).

Causal Judgment

When people make causal judgments they exhibit biases. For example:

- Over-weighting confirming information (e.g., Mandel & Lehmann, 1998)
- Favoring prior beliefs over data (e.g., Fugelsang & Thompson, 2001)

Example:

A person figuring out whether she is allergic to shellfish might consider how often she eats shellfish and then experiences an allergic reaction. This information corresponds to **Cell A** of the 2 x 2 contingency table depicted above. **Cell A** represents the number of times both the cue (shellfish) and the outcome (allergic reaction) are present. However, this information is not sufficient for determining the relation between eating shellfish and allergic reactions: Maybe this person frequently experiences allergic reactions without eating shellfish (**Cell C**) or fails to experience allergic reactions after eating it (**Cell B**).

2 x 2 Contingency Table

		Outcome	
		Present	Absent
Cue	Present	A	B
	Absent	C	D

Cells are Not Treated Equally – The Cell Weight Inequality

People think cause-present, confirming evidence (**Cell A**) is most important (Kao & Wasserman, 1993). Subjects' causal judgments reflect the following cell weighting (Mandel & Lehman, 1998): **Cell A > Cell B > Cell C > Cell D**

Interdependents Better at Background:

What is “Background” Information in a Causal Task?

- Possibility #1:** Cause-absent information (**Cell C** and **Cell D**).
- Possibility #2:** Disconfirming information (**Cell B** and **Cell C**).
- Kim, Grimm & Markman (2007) found **interdependent**-primed subjects more likely to control for a causally-relevant co-factor than **independent**-primed subjects. Their result may be driven by greater sensitivity to either cause-absent information or to disconfirming evidence.

Competing Hypotheses

- #1: Cause Presence/Absence is Important Dimension**
Interdependent-primed subjects will give greater weight to Cells **C** & **D** than **Independent**-primed subjects.

#2: Confirming Vs. Disconfirming Evidence is Important Dimension
Interdependent-primed subjects will give greater weight to Cells **B** & **C** than **Independent**-primed subjects.

Method

- 81 subjects received an **independent** or an **interdependent** prime
- 2 cover stories (skin rash, car accidents) delivered in separate blocks
- In each block: 28 randomly-ordered trials, each with the cell information from one row of Table 1
- Example:** For the allergy cover story, subjects determined the relation between hiking in the woods and developing a skin rash in different samples (i.e., doctor's offices). They saw numbers from 28 different doctor's offices regarding children who were or were not hiking and who did or did not develop a skin rash.

On each trial, subjects made a causal judgment from -100 (indicating perfect inhibitory relation) to +100 (indicating perfect generative relation)

Dependent Measure: Cell Weight

Absolute value of the Pearson's r between individual subject's causal rating and the cell frequencies.

Analysis

- Mixed linear model analysis because of unbalanced data.
- No significant effects of story: Results averaged over story.
- All reported cell differences significant per Bonferroni post-hocs.

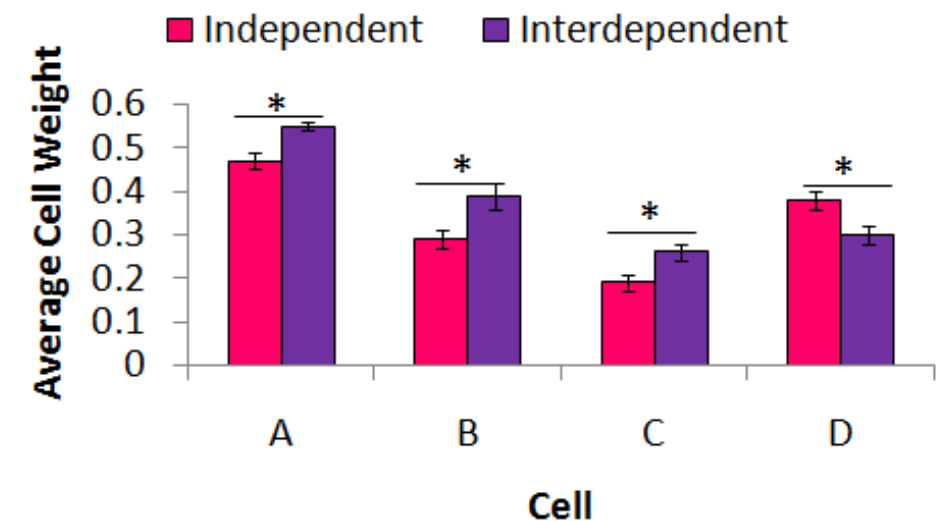
Table 1. Cell frequencies for each of 28 trials.

A	B	C	D	Phi Coefficient	Trial Type
8	2	4	1	0.00	non-contingent
4	1	8	2	0.00	non-contingent
2	1	8	4	0.00	non-contingent
8	4	2	1	0.00	non-contingent
2	8	1	4	0.00	non-contingent
1	4	2	8	0.00	non-contingent
4	8	1	2	0.00	non-contingent
1	2	4	8	0.00	non-contingent
4	1	2	8	0.58	contingent
8	2	1	4	0.58	contingent
2	1	2	5	0.36	contingent
5	2	1	2	0.36	contingent
5	1	2	2	0.36	contingent
2	2	1	5	0.36	contingent
5	0	7	3	0.35	contingent
2	0	7	6	0.32	contingent
2	7	0	6	0.32	contingent
2	4	1	8	0.27	contingent
8	1	4	2	0.27	contingent
3	7	1	4	0.11	contingent
1	2	2	5	0.05	contingent
5	2	2	1	0.05	contingent
2	1	5	2	-0.05	contingent
2	5	1	2	-0.05	contingent
2	5	2	1	-0.36	contingent
1	2	5	2	-0.36	contingent
1	5	2	2	-0.36	contingent
2	2	5	1	-0.36	contingent

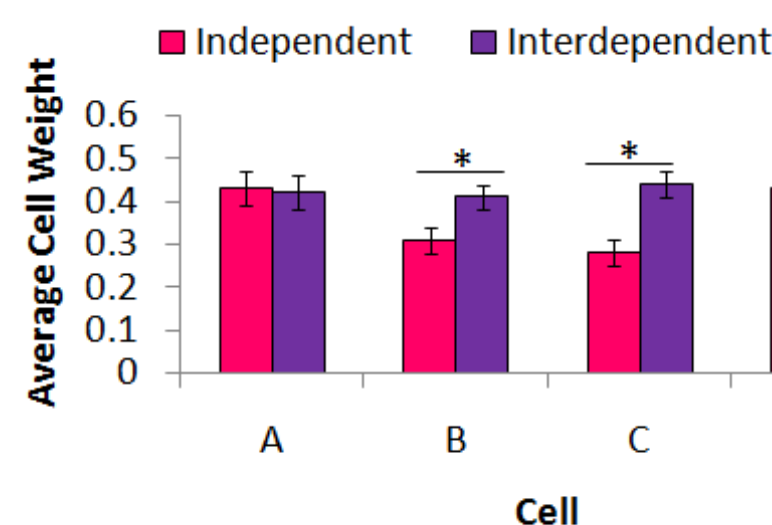
Results: Cell Weights for Contingent Trials

Interdependents
 Favor Cause-Present Information
Cell A > Cell B > Cell C = Cell D

Independents
 Favor Confirming Information
Cell A > Cell D > Cell B > Cell C



Results: Cell Weights for Non-contingent Trials



Interdependents
 Equally Weight All Cells
Cell A = Cell B = Cell C = Cell D

Independents
 Favor Confirming Information
Cell A = Cell D > Cell B = Cell C

Conclusions

- Consistent with hypothesis # 2, **independents** weighted confirming information (Cells **A** and **D**) more heavily than disconfirming information (Cells **B** and **C**) – a pattern not observed among **interdependents**.
- Overall, **interdependents** weighted cell information more heavily than did **independents**, a result suggesting that the causal judgments of **interdependent**-primed subjects greater reflect the observed data.
- Being **interdependent** did not completely ameliorate biases in data-weighting: on contingent problems, **interdependents** favored cause-present over cause-absent information and both groups favored **Cell A** – the confirming, cause-present information.

References

- Fugelsang, J.A., & Thompson, V.A. (2001). *Canadian Journal of Experimental Psychology*, 55, 70-76.; Kao, S.F., & Wasserman, E.A. (1993). *Journal of Experimental Psychology: Learning, Memory, & Cognition*, 19, 1363-1386.; Kim, K., Grimm, L.R., & Markman, A.B. (2007). *Memory & Cognition*, 35, 1337-1343.; Kühnen, U., Hannover, B., & Schubert, B. (2001). *Journal of Personality and Social Psychology*, 80, 397-409.; Mandel, D.R., & Lehman, D.R. (1998). *Journal of Experimental Psychology: General*, 127, 269-285.; Miyamoto, Y., Nisbett, R., & Masuda, T. (2006). *Psychological Science*, 17, 113-119.